MOUNTAIN METRO FARE STUDY

Final Report [DRAFT]

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1 Introduction

PROJECT OVERVIEW

The Mountain Metro Fare Study is a comprehensive analysis of Mountain Metro's current fare system, including fare structure, policies, and technologies for both fixed-route and demand-response transit services. It builds upon the last fare study completed in 2012. The first phase of this study included a comprehensive evaluation of Mountain Metro's existing fare structure, pricing, and policies, a scan of new fare technologies, a review of peer agencies and fare-related practices, and input from stakeholders.

This report provides recommendations for fare pricing and structure, fare policy changes, and fare-related technology for Mountain Metro. Fare recommendations incorporate results from reviewing national best practices, evaluation of fare scenarios, and refining concepts with Mountain Metro staff. Key recommendations include: adjustments to base fare and pass pricing, offering a new mobile ticketing option, providing new reduced fare pass options, improvements to the transfer policy, establishing new policies, and expansion of bulk pass programs with employers, colleges, and universities in Colorado Springs.

FARE STUDY GOALS

The overall purpose of the study is to evaluate the current condition of Mountain Metro's fare structure and policies and to develop recommendations to improve the customer experience, increase ridership, minimize impacts to fare revenue and collections, simplify fare payments by reducing reliance on cash, and enhance equity among passengers.

Specific goals and objectives for the fare study are summarized as follows:

- **Make fares less complicated for current and new riders.** The fare system should be simple to use for existing riders and not intimidate new riders.
- **Improve fare structure and match to service quality.** This reviews the existing fare structure, including pass options and pricing, to identify if changes are warranted or necessary to support recommended changes in fare media. Mountain Metro is rebuilding from service cuts that were made during the recession, with a focus on increasing frequency. There are now several routes with 15-minute service frequency for the first time. As services are enhanced, the agency would like to ensure that fares align with service quality.
- **Investigate new fare technologies.** This study will look at both short- and long- term ideas for new technologies such as mobile ticketing and provide recommendations for Colorado Springs.

- **Improve operations and speed up boarding.** Assess opportunities to speed up boarding and improve operations by speeding up the payment process at the front door. Improvements to operations have a positive impact on ridership.
- **Evaluate fare media.** Identify the most appropriate fare media for Mountain Metro and evaluate ways to reduce cash payments. Nearly half of all fares are paid in cash, and many customers are paying in pennies, nickels, and dimes, which slows down the boarding process.
- **Reduce conflict at the farebox.** Reduce or minimize the potential for conflict with drivers at the farebox.
- **Ensure equitability.** Ensuring equity at the farebox among passengers is a goal of this project. This study will look at farebox evasion and the prevalence of people paying short fares. The study will also assess the use of fixed-route transit for free by ADA-eligible passengers with an eye to equity among passengers.
- **Be conscious of low-income ridership.** Much of Mountain Metro's current ridership base is low income, and current riders often express that it is very expensive for them to ride.
- **Increase ridership and minimize lost revenue.** It is more important to gain ridership than revenue as an outcome of this study. Increasing ridership with no impact on revenue is an acceptable outcome, but keeping the same ridership and reducing revenue would not be.
- **Compare Mountain Metro with peers**. Review practices of peer agencies and national trends, including best practices for student pass programs and a review of Mountain Metro's new student pass program to make sure it is on the mark. The fare study will provide facts and a comparison with peer agencies that can be used to support future changes to fare structure or policy

REPORT ORGANIZATION

This Final Report is a presentation of findings and recommendations from the Mountain Metro Fare Study. In addition to this Introduction, the report is organized into four chapters:

- **Chapter 2 Existing Conditions.** This chapter summarizes the key findings from the Existing Conditions report. It includes key takeaways regarding Mountain Metro's fare structure and policies, peer analysis, fare technology options, and stakeholder feedback.
- **Chapter 3 Best Practices.** This chapter provides an evaluation of fare policies and best practices across the transit industry that are of particular interest to Mountain Metro. Topics addressed include implementing fare adjustments, bulk pass programs, university pass programs, service contractors and fare collection, and fare technology adoption.
- **Chapter 4 Fare Scenarios.** This section introduces a range of fare scenarios to demonstrate the ridership and revenue impacts of potential fare structure and policy changes.
- **Chapter 5 Recommendations.** The final chapter provides fare recommendations that incorporate results from reviewing national best practices, evaluation of fare scenarios, and refining concepts with Mountain Metro.
- **Appendix A King County Metro Fare Policy Manual** provides a helpful example of fare policy for service contractors.

- **Appendix B Orange County Vendor Program Guidelines** provides an example of vendor agreement and guidelines for third-party retail sales.
- **Appendix C Existing Conditions Report** contains a thorough analysis of Mountain Metro's fare structure and policies, a peer analysis, fare technology, and stakeholder input.
- **Appendix D Mobile Ticketing RFP Memo** discusses approaches to procurement of a mobile ticketing platform that will meet the short- and long-term needs of Mountain Metro and its customers.

2 Key Takeaways from Existing Conditions

This chapter summarizes the key findings from the Existing Conditions report, including takeaways regarding Mountain Metro's fare structure and policies, peer analysis, and fare technology options. A full copy of the Existing Conditions report is provided in the Appendix.

EXISTING CONDITIONS FINDINGS

Fare Structure Findings

Mountain Metro offers single ride fares, ticket books, and unlimited ride passes for fixed-route and paratransit (Metro Mobility) services. The current Mountain Metro fare structure, including fare type, fare category, and price is detailed in Figure 2-1.

Figure 2-1 Mountain Metro Fare Table (2017)

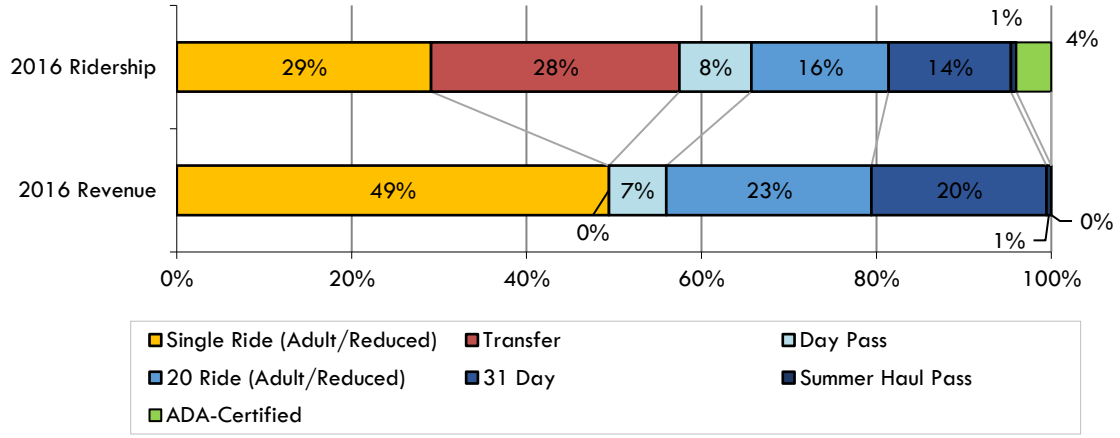
Fare Type	Adult	Special
Fixed-Route		
Single Ride	$1.75	$0.85
Transfer	Free	
Day Pass	$4.00	N/A
20 Ride Ticket	$32.00	$16.00
31 Day Ticket	$63.00	N/A
Summer Haul Pass Valid June-August	$25.00 (Under 18)	
College Student	Free	
Metro Mobility Certified	Free	
Paratransit		
Single Ride	$3.50	
10-In City Mobility Book	$35.00	
40-In City Mobility Book	$140.00	

Cash Payments and Transfers are Widely Used among Mountain Metro Riders

Combined, single rides and transfers account for nearly 60% of riders and 50% of revenues. Other commonly used fare products are 31-Day and 20-Ride passes. Day passes are used by just 6% of all riders and are not available for special (reduced) fare. Ridership by fare type is shown in Figure 2-2 below.

Metro Mobility Certified riders riding fixed-route services for free in 2016 comprised 3.2% of all fixed-route passengers. According to swipe card data analyzed by Mountain Metro staff, 155 of 405 (38%) Metro Mobility clients using fixed-route services did not use paratransit service in the previous one-year timeframe.

Figure 2-2 Fixed-Route Ridership and Revenue by Fare Type (2016)



Transfers offer benefits and drawbacks

The fare study considered whether Mountain Metro should eliminate free transfers. Eliminating paper transfers would help reduce fare disputes and fare evasion, reduce driver delay in issuing transfers, improve operations, speed up boarding, simplify fares, and move toward industry direction of reducing use of paper transfers in favor of increased pass use.

However, increasing ridership is a goal of the fare study. Fare elasticities indicate that eliminating transfers will result in a decrease in ridership.

Figure 2-3 Mountain Metro Transfer Card

Pass Distribution is Complicated for Customers

Tickets are available to purchase in-person at Mountain Metro, at various grocery stores, online, at ticket vending machines (TVMs), and onboard. Not all ticket products are available at all outlets, however—which may be a barrier to use for some customers. Additionally, TVMs frequently need repair. Fare product availability onboard, online, in stores, and at TVMs is detailed in Figure 2-4.

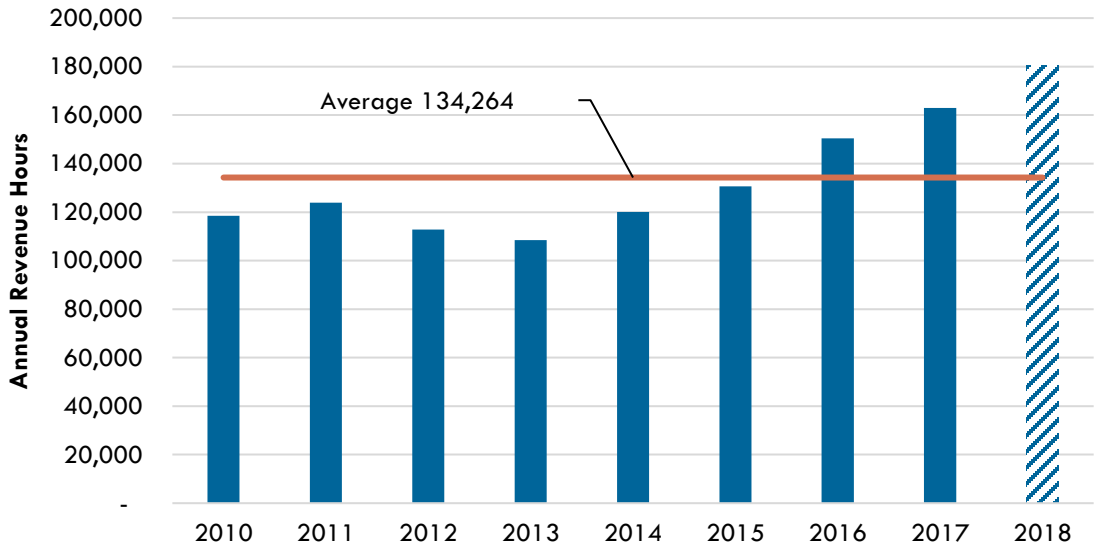
Figure 2-4 Pass Distribution Networks

Fare Type	Onboard	Online	In Stores	TVM
Fixed-Route				
Single Ride Ticket - Adult	✓	✓	✓	✓
Single Ride Ticket - Special	✓			
Transfer	✓			
Day Pass (Adult)	✓			✓
20 Ride Ticket (Adult/Special)		✓	✓	✓
31 Day Ticket (Adult)		✓	✓	✓
Summer Haul Pass		✓	✓	
Paratransit				
Single Ride	✓	✓	✓	
10-In City Mobility Book		✓	✓	
40-In City Mobility Book		✓	✓	

Mountain Metro is Increasing Service Levels in 2018

Mountain Metro is rebuilding from service cuts that were made during the recession, with a focus on increasing frequency. There are now several routes with 15-minute service frequency for the first time, and an 11% service increase is planned for Fall 2018. The focus of the 2018 service change is on increasing frequency on highest ridership routes, connecting important community activity centers, enhancing on-time performance, and adding service to job-access routes during off-peak times. This increase will amount to a total increase in service of 66% since 2013. As services are enhanced, Mountain Metro would like to ensure that fares align with service quality.

Figure 2-5 Mountain Metro Annual Revenue Hours, 2010-2018



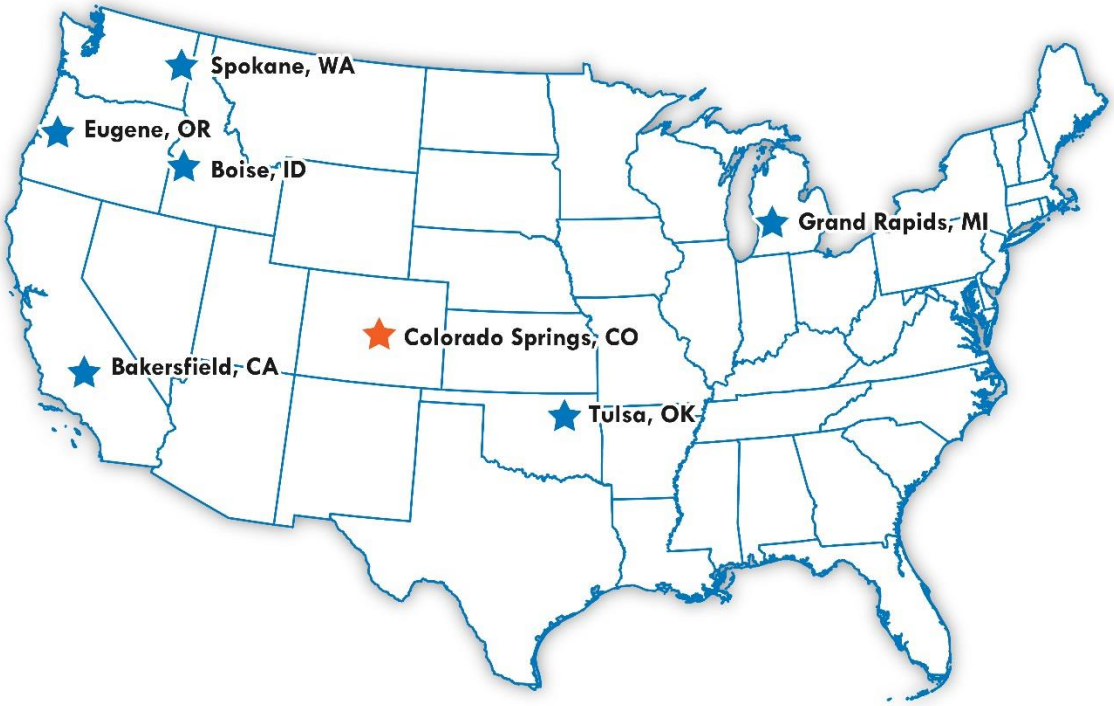
Peer Review Findings

Peer reviews are a useful technique to understand the "state of the practice" with regard to fare levels, structures, and policies. The peer agencies were selected based on various attributes, including service area, service population, operating characteristics, and feedback from Mountain Metro staff. The six agencies included in the peer review are:

- **The Rapid,** Grand Rapids, MI
- **Spokane Transit Authority,** Spokane, WA
- **Golden Empire Transit,** Bakersfield, CA
- **ValleyRide,** Boise, ID
- **Lane Transit District,** Eugene, OR
- **Tulsa Transit,** Tulsa, OK

Peer agencies were evaluated to provide current and accurate information about fare structures and policies at other comparable transit agencies around the country.

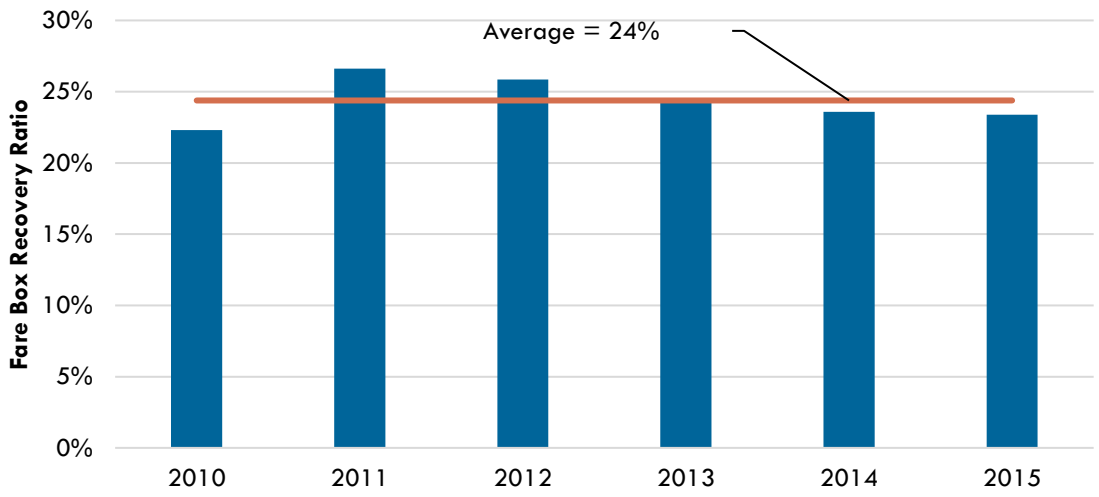
Figure 2-6 Peer City Map



Farebox Recovery is Declining but Still Higher Than Peers

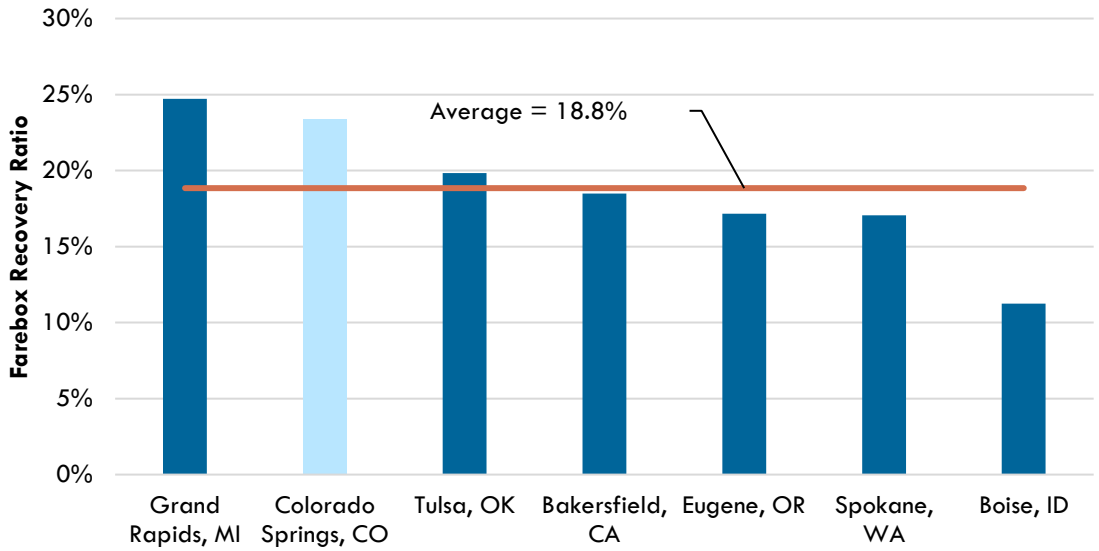
The 2012 Fare Study recommended adoption of a 25% farebox recovery goal. Mountain Metro farebox recovery ratio has been declining since 2011, from a high of 26.6% in 2011 to 20.1% in 2016. However, as of 2015, Mountain Metro still has higher farebox recovery ratio than all peers except one (TheRapid in Grand Rapids, MI). The national average is around 23%.

Figure 2-7 Mountain Metro Farebox Recovery Ratio – Fixed-Route



Source: NTD 2010-2015 Reports

Figure 2-8 Peer Farebox Recovery Ratio – Fixed-Route



Source: NTD (2015)

Base Fare of $1.75 is Comparable to Peers

Mountain Metro's base fare of $1.75 is comparable to peer agencies. Several agencies with higher levels of service (both ridership and annual service hours) also have a base fare of $1.75.

Figure 2-9 Peer Base Fares

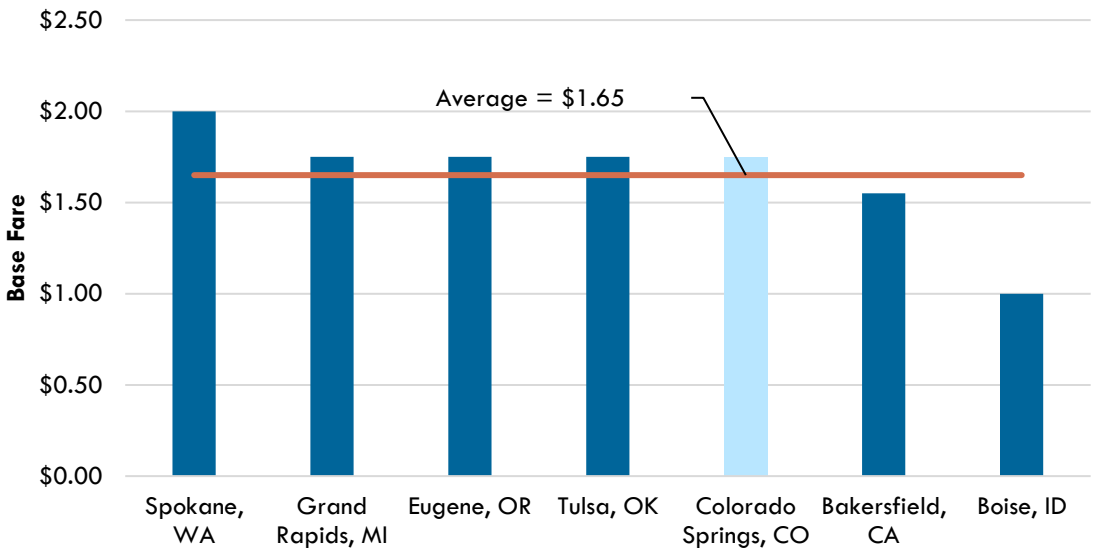
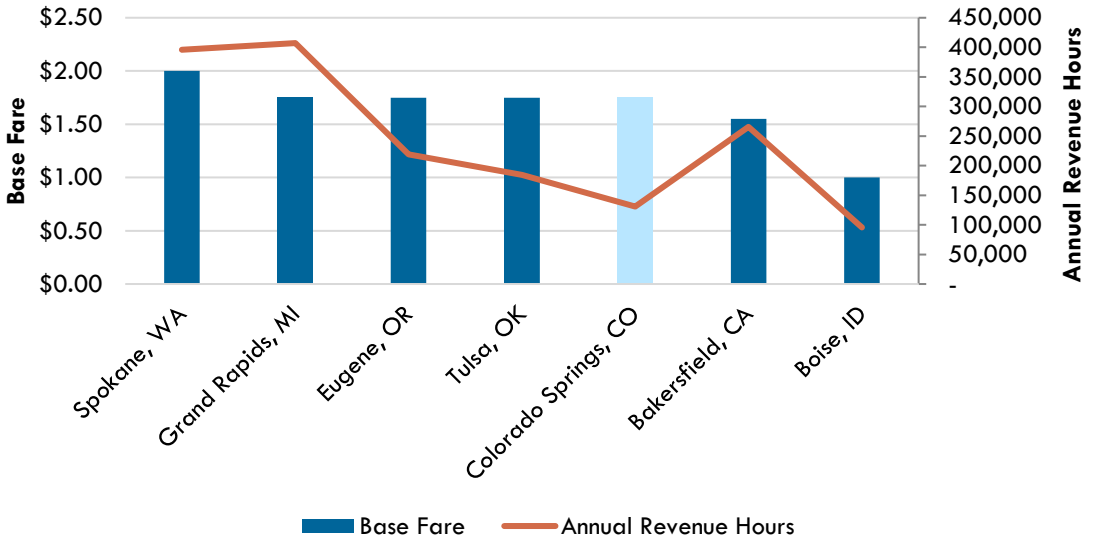


Figure 2-10 Peer Base Fare and Revenue Hours Comparison



Passes are Not Priced Competitively

Pricing of Mountain Metro's pass products can be adjusted to make them more attractive to riders. Mountain Metro's 31-Day Pass discount is significantly lower (and therefore, less attractive) than discounts offered by peer agencies.

31 Day passes are priced at $63, meaning a customer would need to ride transit 36 times in a 31-day period to break even, equivalent to 18 round trips or a "multiplier" of 36. For a commuter working an average of 20 weekdays per month, this allows two days off from taking transit. The 36 multiplier is at the upper edge of a typical range seen around the industry, and a lower multiplier could help incentivize pass use and reduce cash payments.

Mountain Metro's 31 Day passes are not available for special (reduced) fare. Peer agencies, including Bakersfield, Eugene, and Tulsa, offer reduced price day passes.

Figure 2-11 Peer 31-Day Pass Pricing and Multipliers

Peer City	Single Ride (Adult)	31-Day Pass (Adult)	31-Day Pass Multiplier (Adult)
Grand Rapids	$1.75	$47.00	26.9
Spokane	$2.00	$60.00	30.0
Bakersfield	$1.55	$42.00	27.1
Boise	$1.00	$36.00	36.0
Eugene	$1.75	$50.00	28.6
Tulsa	$1.75	$45.00	25.7
Colorado Springs	$1.75	$63.00	36.0

20-Ride Pass is Unique among Peers

Mountain Metro has the opportunity to adjust pricing on the 20-Ride pass to make it more attractive. Mountain Metro is the only agency among the peer group that offers a 20-Ride pass, at a discount from the base fare of 9%. Eugene and Tulsa offer a 10-Ride pass with discounts ranging from 9% to 20%. Grand Rapids, Spokane, and Tulsa offer a 7-Day Pass.

Figure 2-12 Peer Multi-Ride Pass Discounts

	Single Ride (Adult)	Multi-Ride Pass (Adult)	Multi-Ride Pass Discount (Adult)
Grand Rapids	$1.75	-	-
Spokane	$2.00	-	-
Bakersfield	$1.55	-	-
Boise	$1.00	-	-
Eugene	$1.75	$16.00 (10-Ride)	9%
Tulsa	$1.75	$14.00 (10-Ride)	20%
Colorado Springs	$1.75	$32.00 (20-Ride)	9%

Peer Agencies have Varying Transfer Policies

Across the industry, Mountain Metro is unusual for offering both transfers and a day pass. The trend has been to phase out transfers and replace them with unlimited-ride hourly or day passes. Half of peers offer a free transfer within 2-hour window, while the other half of peers do not offer free transfers. In 2018, Grand Rapids is changing its fare structure to include new 90-minute, paper-free transfer time frame with e-fare and elimination of paper transfers with cash fare.

Figure 2-13 Peer Agency Transfer Policies

Agency	Transfer Policy
Grand Rapids	Currently free for up to three boardings within 2 hours, not on same route. Changing in 2018 to free for 90 minutes if paid with e-fare. No transfers for cash fare.
Spokane	Free within two hour window
Bakersfield	No transfers
Boise	No transfers
Eugene	No transfers
Tulsa	Free within two hour window
Colorado Springs	Free for two transfers in one direction within two hour window

Mobile Ticketing is Being Implemented by Peer Agencies

Bakersfield recently introduced a mobile ticketing app. The agency has seen higher-than-expected rates of mobile ticketing use, as well as significant improvements in bus boarding performance and daily cash-handling efficiency.

Pennies are Not Accepted by Some Peer Agencies

Pennies slow down boarding as passengers count out change at the farebox. Peers in Spokane, Bakersfield, and Eugene do not allow riders to pay on-board cash fares with pennies.

Metro Mobility 40-Ride Pass is Unique among Peers

The Metro Mobility 40-Ride pass is unique among peers but decently utilized. Most peers offer a 10-Ride trip booklet for paratransit service, similar to Mountain Metro. Colorado Springs is unique in offering a 40-Ride trip booklet for paratransit. Spokane also allows paratransit passengers to pay via smartcard.

Fixed-Route Free Rides for Metro Mobility are above Federal Requirements

All peers allow for reduced price or free travel on fixed-route service with an ADA card. Grand Rapids and Tulsa offer free rides on fixed-route for ADA eligible riders and PCAs, similar to Mountain Metro. In Grand Rapids, use of this service varies by season, with more ADA eligible riders using fixed-route services in warmer months. Grand Rapids paratransit fare also allows free transfers to fixed-route services. Eugene requires ADA passengers to get a separate reduced fare card to ride fixed-route service. Under federal requirements, PCAs can be charged for rides on fixed-route service.

Figure 2-14 Peer Agency Paratransit Fare Comparison

Agency	Paratransit 1-Ride Fare	Pass Products and Pricing	PCA Policies	Fixed-Route Fare for ADA Riders
Grand Rapids	$3.50	10-Ride $35	PCAs ride free on paratransit or fixed-route	Free with ADA pass
Spokane	$1.75	Monthly Pass $50 10-Ride $17.50	PCAs ride free on paratransit	Can use monthly paratransit pass on fixed route or pay reduced fare
Bakersfield	$3	10-Ride $30	PCAs ride free on paratransit	Reduced Fare
Boise	$2	None	PCAs ride free on paratransit or fixed-route	Reduced Fare
Eugene	$3.50	10-Ride $35	PCAs ride free on paratransit	Half are “easy pass” requires separate pass with photo ID ($3)
Tulsa	$3.50	10-Ride $35	PCAs ride free on paratransit or fixed-route	Free with ADA pass
Colorado Springs	$3.50	10-Ride $35 40-Ride $140	PCAs ride free on paratransit or fixed-route	Free with ADA pass

Fare Technology Findings

Adopting New Fare Technology Helps Meet Agency Goals for Fare Collection

Not all fare payment technologies achieve all of Mountain Metro's fare goals, underscoring the importance of providing multiple options (Figure 2-15). Adopting new technology is a way to provide additional options for fare payment.

Figure 2-15 Fare Payment and Technology Summary

	 Cash	 Swipe Card	 Smart Card	 Mobile Ticketing
Current portfolio	✓	✓	-	-
Origin-destination data	-	✓	✓	✓
Safegaurds against fare evasion	-	✓	✓	✓
Simplifies distribution network	-	-	X	✓
Requires technology upgrade	-	-	✓	✓
Allows for customer account	-	-	✓	✓
Reduces potential conflict at farebox	-	✓	✓	-

Mountain Metro is Ready for Mobile Ticketing

Onboard survey results indicated that 54% of existing Mountain Metro customers would use a mobile ticketing option.[1] The fare study evaluated the pros and cons of adopting mobile ticketing in Colorado Springs (Figure 2-16). Additional research indicates Mountain Metro may be able to lower the barrier of entry for new riders by offering a mobile ticking option.

Allowing more choices for purchasing fares and paying fares can attract riders (especially younger people who are more accustomed to innovative payment options for other goods and services) and reduce dwell times—therefore, speeding up service.

Figure 2-16 Benefits and Drawbacks of Mobile Ticketing Adoption

Fare Media	Benefits	Drawbacks
 **Mobile Ticketing**	▪ Customer convenience ▪ Operational savings ▪ Reduce delay in fare payment ▪ Lower farebox maintenance costs ▪ Various options for validation ▪ Reloadable ▪ Fare products available on phone – no need for additional sales outlets	▪ Nearly one-quarter (22%) of MMT customers do not own a smartphone ▪ Requires bank account or prepaid gift card ▪ Software development can be expensive ▪ Requires WiFi or data plan to activate

Mobile Ticketing Options Vary in Scale and Cost

Mountain Metro has several options for adopting mobile ticketing technology that vary in scale and cost depending on the complexity of the mobile application itself, the farebox hardware used to validate the mobile ticket, and the back-end software (Figure 2-17). Visual Validation relies on existing farebox hardware and a mobile ticketing app that is shown to drivers upon boarding. Digital Validation uses the existing farebox with an additional unit to validate passengers' mobile tickets upon boarding. Digital Validation on Farebox requires installation of entirely new fareboxes and the highest capital expenditures.

Figure 2-17 Mobile Ticketing Options

Option	Farebox Hardware	Mobile Ticketing	Estimated Capital Expenditures
Option 1: Visual Validation	Existing Genfare Odyssey Box (3rd Edition)	1a. Token Transit App	$0
		1b. Genfare App	$150,000
Option 2: Digital Validation	Existing Genfare Odyssey Box (3rd Edition)	2a. External low-energy Bluetooth beacons	$16,500
		2b. Genfare Fast Fare-E unit	$342,000
Option 3: Digital Validation on Farebox	New Genfare Fast Fare Box	3. Genfare digital validation *on* farebox	$893,000

[1] Mountain Metro Transit 2017 Rider Survey
https://coloradosprings.gov/sites/default/files/2017_survey_analysis_0.pdf

Mountain Metro is Ready for Smart Cards, but Smart Card Adoption Requires Significant Investment

Mountain Metro's system is ready for smart card technology; however, adopting smart card technology may not be the best use of funds. Offering an option that is in many ways redundant to swipe card makes the rollout of a smart card option a difficult cost to justify.

Figure 2-18 Benefits and Drawbacks of Smart Card Adoption

Fare Media	Benefits	Drawbacks
 Smart Card	▪ Account-based system, allows for user features like autoload and balance protection ▪ Can load value online or over the phone ▪ Faster boarding times ▪ Durability ▪ Enhance data collection	▪ Lack of distribution channels ▪ Require investment in technology upgrade and infrastructure ▪ More fare options may lead to confusion for customers ▪ Complexity for agency staff

Mountain Metro has several options for smart card technology. The low-tech option is to activate smart card functionality on existing Genfare Odyssey fareboxes. This would require upgrading back-end software to the Genfare Link Program software, for roughly $485,500. The high-tech option is to purchase new Genfare Fast Fare fareboxes as well as upgrade to Genfare Link Program software. The capital expenditures for the high-tech option are estimated at $1,532,600.

Figure 2-19 Smart Card Options

Option	Farebox Hardware	Smart Card Program	Estimated Capital Expenditures
Option 1: Low Tech	Existing Genfare Odyssey Box (3rd Edition)	Activate smart card functionality Genfare Link Program	$485,800
Option 2: High Tech	New Genfare Fast Fare Box	Genfare Link Program	$892,500 farebox upgrade + $640,000 Link = $1,532,600 Total
Option 3: No upgrade	Existing Genfare Odyssey Box (3rd Edition)	-	$0

3 Best Practices

This chapter provides an evaluation of fare policies and best practices across the transit industry. Topics addressed include guidelines for implementing fare adjustments, bulk pass programs, university pass programs, service contractors and fare collection, and fare technology adoption.

Key Takeaways

Bulk Pass and University Pass Programs

- Large employers in Colorado Springs (200 employees or more) that are served by transit represent low-hanging opportunities to expand the bulk pass program, increase revenue, and boost ridership.
- Student Pass program reimbursement strategies can be enrollment-based, ridership-based, or service-based

Service Contractors and Fare Collection

- Most U.S. transit agencies follow the Gross-Cost Contract Model, where transit agencies own fare revenues and contractors are responsible for fare collection and reconciliation.
- In order to incentivize full collection of fares on fixed-route and paratransit, agencies can implement fare policies that hold the contractor accountable for shortages in revenue.
- Many agencies handle the collection of their multimedia fare products, which reduces the need for fare reconciliation, fare handling, and puts the agencies in greater control of their revenue.
- For many agencies, fare collection for paratransit is not heavily enforced due to equity concerns and the small fare recovery potential.

Fare Technology Adoption

- Mountain Metro can save staff time and resources by moving forward with an RFP for mobile ticketing services without the use of a pilot program.
- Pilot programs allow agencies to roll out mobile ticketing quickly, and depending on agency procurement policies, without a lengthy RFP process. However, a pilot program means that Mountain Metro would have to go through two procurement processes instead of one.
- Once adopted, offering an initial discount can attract riders and help market new fare technology.

Vendor Return Policy

- Mountain Metro uses a paid in advance model for third-party retail pass vendors. With the paid in advance model, vendors are often offered a discount for large purchases to incentivize the partnership with the transit agency.Discounts can be offered at a flat rate—e.g., 10% discount on all sales—or a tiered rate based on the size of the ticket order.
- Most agencies do not provide vendors with refunds on passes, but offer the opportunity to exchange pass products.
- Transit agencies can provide vendors with a Pass Sales Agreement and Program Guidelines to formalize the partnership.

GUIDELINES FOR FARE ADJUSTMENTS

Mountain Metro is interested in maintaining alignment between fare structure to service quality. Mountain Metro is rebuilding from service cuts that were made during the recession, with a focus on increasing frequency. As services are enhanced, the agency would like to ensure that fares align with service quality. Many agencies establish a transparent fare increase policy that enables more regular fare increases to stay in-line with inflation, farebox recovery, and other revenue-related trends to address this. Several factors need to be considered when raising fares, ranging from how fares are perceived by the transit riding public, whether they are "in-line" with peer agencies, to what is the "appropriate" ratio between passenger fares and operating costs. When considering a fare change, an agency may consider:

- **Farebox recovery:** Is there a systemwide goal that will drive future fare increases?
- **Fare types:** Are there opportunities to simplify or expand fare options when implementing a fare increase?
- **Fare collection:** Are there opportunities to implement new technologies, practices, or policies to streamline fare collection?

A new fare policy must balance multiple conflicting goals. Any changes to the existing fare structure must balance the tradeoff between ridership and revenue. For example, although an increase in fares would result in higher revenues for Mountain Metro, it would also result in a decrease in ridership. One option is to institute a fare increase schedule to implement a fare change over multiple steps or years to minimize the financial impact on riders and ridership impacts on the agency.

Likewise, prices for different fare media should be set with the impacts to revenues and ridership in mind. Price points for different fare media (such as one-way fare, day passes, and monthly passes) create different incentives for users and pass buyers. Other considerations for implementing a fare increase include customer experience, technical operations, timing a change in fares with a service change, financial processes, system operation, and accessibility to vulnerable populations.

Ultimately, any changes in fare policy should be practical for Mountain Metro service and align with systemwide goals. Once agency goals and desired outcomes have been determined, there are several actions that should be taken as part of the fare change process. These include:

- **Involve the public:** Proposed fare changes should include extensive public outreach, to both riders and non-riders, to educate the public about any changes and obtain valuable public feedback. The rationale for any fare increase should be clearly messaged to the public, as well as any associated improvements.

- **Revise customer information:** Once changes have been agreed upon, customer information (such as websites, brochures, apps) should be updated in a timely manner.
- **Monitor results:** allow opportunity to review and fine-tune the fare structure following implementation.

Figure 3-1 provides an overview of an agency's approach to fare changes.

Figure 3-1 Phased Approach to Implementing Larger Fare Changes

BULK PASS PROGRAMS

In recent years, growing numbers of transit agencies have teamed with universities, employers, or residential neighborhoods to provide bulk transit passes. These passes typically provide unlimited rides on local or regional transit providers for low monthly fees, often absorbed entirely by the employer, school, or developers.

A bulk pass program provides a participating organization free or deeply discounted transit rides for a financial guarantee. These programs are slightly different than pass sales since they often assume that 100% of an organization's members are eligible for the program whether or not they regularly use public transportation. The benefit to major institutions is that a well-designed program provides a simple, packaged solution to help solve transportation access issues to their organization. These types of programs can be implemented in different ways, but the most common financial contribution approaches include the following:

- Contribution determined by current employees, residential units, students, etc. as reported by the participating organization (fee may be different for students, faculty, or staff at a university)
- Contribution determined by ridership
- Annual fixed fee (same price, regardless of institution size or usage)

Bulk transit passes provide multiple benefits, as discussed in Figure 3-2. While bulk pass programs tend to be affiliated with bus service, in most cases they are part of a broader multi-modal transportation strategy that includes improved bike programs, carshare programs, carpooling/vanpooling strategies, and often, increased parking rates.

Figure 3-2 Bulk Pass Program Benefits

Beneficiary	Bulk Pass Benefit
Transit Riders	Free access to transit
	Rewards existing riders, attracts new ones
	For employees who drive, making existing transit free can effectively create convenient park-and-ride shuttles to existing underused remote parking areas
Transit Agencies	Provides a stable source of income
	Increases transit ridership, helping to meet agency ridership goals
	Can help improve cost recovery, reduce agency subsidy, and/or fund service improvements
Communities	Reduces traffic congestion and increases transit ridership
	Reduces existing, unmet, and future growth in parking demand
Developers	Bulk pass programs can benefit developers if implemented concurrently with reduced parking requirements, which consequently lower construction costs
	Providing free cost transit passes for large developments provides an amenity that can help attract renters or home buyers as part of a lifestyle marketing campaign appealing to those seeking a "new urban lifestyle"
Employees/ Employers	Reduces demand for parking on-site
	Provides a tax-advantaged transportation benefit that can help recruit and retain employees

Source: City of Pasadena Traffic Reduction Strategies Study, 2007

Negotiations and Pricing

A review of existing bulk transit pass programs found that the annual per-employee fees are between 2% and 33% of the retail price for an equivalent annual transit pass.[2] The principle of employee or residential transit passes is similar to that of group insurance plans—transit agencies can offer deep bulk discounts when selling passes to a large group with universal enrollment, on the basis that not all those offered the pass will actually use them regularly. Key to success is to spread the costs of the trips so that the cost per person remains quite low per person. The reasoning behind the shared cost is that additional transit riders benefit drivers by reducing traffic and parking congestion.

Federal Tax Incentives

There are potential tax benefits for both employers and employees participating in employee pass programs. If employers fund the pass, it can be offered as a benefit that does not require payroll taxes, and it qualifies as a tax-deductible business expense for the company. If the pass is paid for by the employee, the payroll amount reserved for the pass is no longer treated as taxable salary. The IRS limit for the 2018 tax year is up to $260/month per employee for vanpool, bus, ferry, or rail (all public transportation).

[2] Sources: King County Metro ORCA Passport Program; AC Transit EasyPass; Denver RTD EcoPass

Marketing

For bulk pass programs to be successful, they must be successfully marketed. This is a measure that costs little in relation to many other strategies, but can reap large rewards in increased ridership and ultimately greenhouse gas reduction. Measuring the effects of marketing campaigns can be difficult, but in general making sure the public is aware and knowledgeable about available transit service is a critical step in attracting riders. Marketing should capitalize on the cost benefits to riders and the environmental benefits associated with the program and should include information about how to use transit and/or other transportation programs. A variety of marketing strategies are shown in Figure 3-3.

Figure 3-3 Bulk Pass Marketing Strategies

Marketing Strategy	Program Description
Information Kiosk	An on-site information kiosk provides information on transit routes, schedules, and fares; carshare and vanpool ridematching services; bicycle maps and resources; and other ways to help people travel by using alternative modes.
Transportation Coordinator	A Transportation Coordinator is a trained, designated employee on-site who is responsible for providing transportation options information to employees and facilitate employee surveying.
Individualized Marketing	Individualized marketing campaigns typically target a neighborhood, corridor, or employment site. These campaigns provide individualized marketing travel options materials in a designated area to encourage people to use alternative modes.

Employer Bulk Pass Program Case Studies

Employer bulk passes are a useful tool for a transit agency to create additional revenue sources and attract choice riders. Depending on the number of passes offered, the program can offer discounts that are attractive to employers.

Employers that are unable or unwilling to cover the costs of transit benefits can still incentivize employees to purchase monthly passes through the pre-tax transit benefit program. Employers can administer this program either through a payroll service company, or if they use in-house payroll, by contracting through a commuter benefit provider.

The structure of employer pass programs varies throughout the U.S. Three examples—King County Metro, Alameda-Contra Costa (AC) Transit, and Denver Regional Transportation District (RTD)—offer best practices for pricing of pass programs.

King County Metro ORCA Pass (Seattle, WA)

King County Metro offers two models of providing ORCA passes for employees through its employer commute services program.

The ORCA business passport program is only available as an employer-provided benefit. The pass provides a $5.75 trip value that is eligible anywhere ORCA cards are accepted. The business passport is an annual transit pass that must be purchased for all benefits-eligible employees. Additionally, the employer must subsidize at least 50% of the cost of each pass. Businesses with 20-499 employees, or as few as 5 employees for employers in downtown Seattle and Bellevue, pay standard pricing. Businesses with over 500 employees receive a subsidy and several add-ons

including a "home free guarantee" (HFG), and 100% subsidy of vanpool and vanshare. Pricing is based on the location of the company and estimated ridership. For example, a business located in Seattle's central business district would pay $706.76 per employee on a new contract (and $816.70 in subsequent years), equal to a 72% discount from an equivalent annual pass in the first year and 67% discount in subsequent years.[3]

The ORCA business choice pass program offers monthly passes or e-purse deposits at retail prices. There is no requirement to purchase passes for all employees—employers may purchase as many or as few as needed. The pricing is based on the length of the transit trip. For both programs, the total monthly costs cannot exceed the federal limit of $260 per month.

AC Transit EasyPass (Bay Area, CA)

AC Transit defines its EasyPass program as being established for a defined employee pool—for example, all full-time employees or all employees who live in AC Transit's service district. According to AC Transit policy, employers must provide passes for all employees in the defined pool regardless of current or anticipated usage, and EasyPass is not refundable or transferable to anyone else.

Pricing of EasyPass is based on a tiered system that factors in the size of the participant pool and level of transit service (Figure 3-4). Employers pay an annual per-participant price based on the matrix shown below. AC Transit offers a deep discount on employer passes—ranging from 94% to 98% off the retail price. In some cases, the annual cost of the Easy Pass is lower than the retail cost of a monthly pass. Employers can choose to subsidize the cost of the pass (in part or in whole) or to pass the cost on to employees as a group benefit.

Figure 3-4 AC Transit EasyPass Pricing Structure (2015)

	Annual Price Per Participant by Number of Program Participants				
Level of Transit Service*	**100-500**	**501-1,000**	**1,001-5,000**	**5,001-10,000**	**10,001+**
1	$121	$103	$86	$68	$51
2	$108	$93	$78	$64	$48
3	$93	$82	$69	$58	$45
4	$81	$70	$62	$53	$43

Source: AC Transit

*Level of Transit Service is a numerical score that reflects the frequency and concentration of commuter bus service available within the ¼ mile of worksite(s). Scores range from 1-4 with 1 representing the highest level of service and 4 the lowest. Only peak-hour service is considered when calculating a score, and adjustments are made for gaps in service, impediments to pedestrian access, and whether the lines in the immediate vicinity provide service to and from San Francisco or the Peninsula.

RTD EcoPass (Denver, CO)

Denver RTD's Business EcoPass provides unlimited usage of RTD services and is an annual transit pass purchased by a company and its employees or a collection of residences. Similar to AC Transit's policy, companies purchase the EcoPass for all full-time employees with an option to include part-time employees. Transit service levels are also accounted for through a tiered pricing structure (Figure 3-5). Pricing for businesses is determined by two factors—location of the

[3] Based on July 2018 fares: $5.75 regional pass cost of $207 per month

business (and corresponding level of service for that area) and total number of full-time employees or total number of full/part-time employees on the payroll. Contract minimum rates apply for businesses with a per-person rate that equals less than the contract minimum. The resulting discount per employee per year ranges from 71% to 97% off the retail price.[4]

Additionally, Boulder County offers a multi-year EcoPass discount (60% off of the first year's purchase price, 30% off of the second year's contract price) to all businesses and neighborhoods signing up for their initial EcoPass contract. EcoPass is tax deductible to employers and tax free to employees.

Figure 3-5 Denver RTD Business EcoPass Pricing Structure (2016)

Cost per Employee per Year (2016)							
Service Level Area	**Number of Employees**	**Contract Minimum Per Year**	**1-24 Employees**	**25-249 Employees**	**250-999 Employees**	**1,000-1,999 Employees**	**2,000+ Employees**
A: Outer Suburban	1-10 11-20 21+	$1,150 $2,300 $3,448	$98	$85	$75	$64	$60
B: Major Transit Centers	1-10 11-20 21+	$2,108 $4,215 $6,322	$209	$189	$173	$160	$151
C:Downtown Denver CBD	1-10 11-20 21+	$2,874 $5,748 $8,621	$532	$493	$470	$459	$434
D: DIA and home businesses	1-10 11-20 21+	$2,874 $5,748 $8,621	$544	$522	$483	$470	$445

Source: Denver RTD

Bulk Pass Opportunities for Mountain Metro

Mountain Metro has the opportunity to expand their bulk pass program to large employers and other readily identifiable groups in the service area to provide bulk rate passes to employees. Large employers in Colorado Springs (200 employees or more) that are served by transit are strong candidates for participants in a potential bulk pass program, which would increase revenue and boost ridership.

The adoption of mobile ticketing payment technology will be prime opportunity for Mountain Metro to market their bulk pass program to potential employers. With the adoption of mobile ticketing, it will be even easier for employers and Mountain Metro to distribute and track organizational usage of bulk passes. Instead of delivering and distributing paper passes every month or year, passes can be reauthorized remotely.

The following list includes select Colorado Springs employers with at least 200 employees that are served by transit (within ½-mile of an existing Mountain Metro route), representing potential

[4] Calculated based on July 2018 Valupass pricing of $1,881 for regional/airport service.

low-hanging opportunities to expand the bulk pass program, increase revenue, and boost ridership:

1. UCHealth – Memorial Health Systems
2. Verizon Wireless
3. Children's Hospital Colorado
4. United Services Automobile Association (USAA)
5. Cobham Semiconductor Solutions
6. EviCore Healthcare
7. Focus on the Family
8. Peak Vista Community Health Centers
9. Penrose-St. Francis/Centura Health
10. Western Forge
11. YMCA of the Pikes Peak Region

Finally, military employers including Fort Carson, the U.S. Air Force Academy, and Peterson Air Force Base are some of the largest employers in the state.

UNIVERSITY PASS PROGRAMS

University pass programs can be mutually beneficial partnerships for both transit agencies and institutions of higher education. For transit agencies, these partnerships can effectively boost ridership and guarantee a relatively steady stream of funding. Conversely, colleges and universities are able to tout the program to students as a convenient and cheaper alternative to driving and parking, and as a way to improve livability by reducing congestion on campus. For many universities, the need for campus transit services grew as a sustainable and economic alternative to providing parking.[5]

Revenue Sources for Student Pass Programs

The most common partnership between a university and a transit agency is through a service contract. The majority of these involve some form of a prepaid or unlimited access service, whereby students (and sometimes faculty/staff) gain access to service that is funded by any combination of student fees, parking permits, parking fees, and university general funds. Student fees (the most prevalent source of funding for these partnerships) can range from less than $10 to well over $50 per semester.[6] For most universities that pay for transit with student fees, the fee per student must be approved by a student referendum, with many of these agreements requiring periodic referendums to renew student fees. According to a Transportation Cooperative Research Program (TCRP) report on transit services on college campuses, passing this referendum is one of

[5] The national average for structured parking construction is $19,000 per space (Carl Walker, 2016, *Mean Construction Costs*, Carl Walker Consulting)

[6] The University of Florida, for example, charges a mandatory Transportation Access Fee of $7.88 per credit hour (as of 2013), which serves to fund the university's $62.94 per service hour payment to the Regional Transit System. Full-time students typically enroll for 12 to 15 credits per semester and subsequently pay fees ranging from approximately $94 to $118.

the most important, yet most time consuming, steps toward expanding transit service for university students.[7]

In addition, many universities use revenue generated from parking permits and fees to supplement (or serve in place of) student fees that support transit operations. Using parking revenue to fund university transit operations makes sense logistically (shuttle services often connect with student parking), financially (parking funds are typically stable sources of revenue), and philosophically (universities that want to discourage drive-alone trips can do so by incentivizing transit and charging for parking).

Cost Reimbursement Methods for Student Pass Programs

There are three primary methods for reimbursing transit agencies for the cost of providing transit service to students.

Enrollment Based. The most common type of reimbursement method between universities and transit agencies is similar to the ones between Mountain Metro and Colorado College (CC) and University of Colorado at Colorado Springs (UCCS). In these cases, the university pays one lump sum per year based on the number of students (and faculty and staff, if they are also part of the agreement) that will be eligible to access transit service for "free."

Ridership Based. Another strategy is for universities to make payments based on actual usage levels (typically at a discounted rate). One example is the University of California, Los Angeles (UCLA) BruinGO! Transit program. For $33 per quarter, students are able to ride all routes on Santa Monica Big Blue Bus and Culver CityBus. For each ride, UCLA reimburses the transit agency at a discounted rate of 84%. Enrolled students who do not opt into the program can still ride for a reduced fare or "co-pay" (currently $0.50) with UCLA reimbursing the agency for the remainder of the discounted fare (currently $0.34). The "co-pay" option is not available during Summer Quarter.

Service Based. One final method is for universities to reimburse the transit agency based on the amount of service provided. Payment based on service provided is typically negotiated explicitly (i.e., setting an hourly rate) or implicitly (i.e., both sides considering required service hours but negotiating specific dollar amounts). Michigan State University has an agreement with the Capital Area Transportation Authority (CATA) that includes costing methodology to determine cost per hour for fixed-route and paratransit service. CATA operates 23 fixed routes, five of which serve campus on weekdays. Students can elect to purchase a semester pass ($50) to access unlimited rides from August to December or January to Mid-June. Students who do not purchase the pass are still eligible for discounted fares, monthly passes, or 10-Ride passes. Finally, CATA also offers a $20 semester pass that is good only on a special route that serves a commuter lot and Central Campus.

Mountain Metro's current agreements with local universities are most similar to the Enrollment Based model. Colorado College pays Mountain Metro a flat rate of five dollars per enrolled student, per semester. The initial agreement between Mountain Metro and University of Colorado at Colorado Springs (UCCS) was a lump sum agreement, with UCCS paying Mountain Metro a lump sum fee regardless of enrollment numbers. The contract notes that future term payments

[7] TCRP Synthesis 39, *Transportation on College and University Campuses: A Synthesis of Transit Practice.*

may be calculated on a registered student basis. In return, Mountain Metro provides detailed student ridership reports to the universities.

Figure 3-6 describes the three main methods for universities contributing to transit agencies, with pros and cons as they relate to the current agreements between Mountain Metro and area universities and colleges.

Figure 3-6 Reimbursement Methods Pros and Cons

Contribution	Method	Pros	Cons
Enrollment Based	University pays a lump sum determined by anticipated enrollment	▪ Process is well established and fees are already agreed upon ▪ Relatively stable funding	▪ Funds may not be commensurate with level of service offered or level of use ▪ Renegotiating student fees can be difficult ▪ Service unlikely to expand if funding remains the same
Ridership Based	University reimburses agency based on actual or projected usage	▪ Proportional to actual usage ▪ Could boost revenue for Mountain Metro	▪ Percentage increases/decreases may be more volatile than changes in enrollment ▪ May require post-processing ▪ Would likely result in higher student fees
Service Based	University pays agency cost per hour for service	▪ Proportional to actual services offered ▪ Could boost revenue for Mountain Metro ▪ Could allow Mountain Metro to easily expand service for area universities and colleges	▪ Mountain Metro would need to develop methodology to indicate which routes/trips are primarily student oriented ▪ Would likely result in higher student fees

SERVICE CONTRACTORS AND FARE COLLECTION

Agencies around the country utilize a variety of strategies to manage, track, and incentivize fare collection by their contractors. This section reviews the industry standards and best practices for fare revenue handling for fixed-route and paratransit services when those services are provided by a third-party contractor. Topics include how agencies manage their contracts, who collects fare revenue across fare media, how passenger fare policies are enforced, and how revenue management is handled in the case of a change in contractors.

Transit Contracting Models

There are three categories of models in transit contracting:

- **Gross-Cost.** Operator provides service for a specified period of time at a set fee. All revenue collected for the service is owned by the agency. The agency sets the fare and the service area. With this contract, the operator has little incentive to pay sufficient attention to revenue collection.
- **Net-Cost.** Operator provides service for a specified period of time and retains all revenue. The agency pays the operator a subsidy if the service is not profitable or a royalty

if the service is profitable. With this contract, if the operator estimates high financial risk, they will be more concerned with cost savings than providing a good service.

- **Quality-Incentive.** Operator provides service and is paid a share of system revenues based on a negotiated formula relating to service measures, such as distance traveled or customers served. With this contract, the operator is most likely to have the strongest interest in providing the best service they can, but it may be difficult to engage a contractor in a service that has high risk.[8]

Similar to most agencies, Mountain Metro's paratransit contracting model follows the structure of a gross-cost model. Some agencies have developed ways to hold the contractors accountable for fare collection, such as through increased monitoring, incentives and disincentives, and farebox recovery quotas. More information about each contracting model can be found in Figure 3-7.

Figure 3-7 Common Payment Structures in Transit Contracting

		Typical Contractor Role	Typical Agency Role	Risk Implications
Payment Structure	**Net-Cost**	Plan and operate service; retain fare revenue	Oversee contract and provide fixed subsidy; cover operator revenue shortfalls	Revenue risk assigned to operator
	Gross-Cost	Operate service for a fixed management fee and/or variable fee on basis of service provided	Oversee contract, plan service, collect fare revenue	Public agency assumes revenue risk
	Quality-Incentive	Similar to a gross-cost agreement but with financial bonuses for exceeding performance targets and/or penalties for underperforming	Oversee contract (including bonus and penalty administration)	Public agency assumes revenue risk

Source: Transit Center and Eno Center for Transportation (2017), A Bid for Better Transit: Improving service with contracted operations

[8] Transit Center and Eno Center for Transportation (2017), A Bid for Better Transit: Improving service with contracted operations
http://transitcenter.org/wp-content/uploads/2017/10/TC-A-Bid-For-Better-Transit-Publication-20170925-Digital.pdf

Transit Contracting Models in Practice

To better understand the transit contracting models in practice, seven agency contracts were explored through informational interviews and online research. These examples cover a range of system sizes, ratio of purchased service to internally-operated service, and contract models. Details about each agency can be found in Figure 3-8.

Figure 3-8 Transit Agency Contract Structure

Agency	Location	Urban Area Population	Percent Service Demand Response	Percent Service Purchased	Contract Model	Operations Contractor
Mountain Metro	Colorado Springs, CO	595,000	58%	78%	Gross-Cost	National Express
King County Metro	Seattle, WA	3,277,000	11%	14%	Gross-Cost	First Transit
Santa Rosa CityBus	Santa Rosa, CA	315,000	30%	33%	Gross-Cost	MV
Petaluma Transit	Petaluma, CA	67,000	43%	100%	Quality-Incentive	MV
Tulsa Transit	Tulsa, OK	686,000	40%	47%	Gross-Cost/Quality-Incentive	MV
NICE Bus	Garden City, NY	18,869,669	28%	100%	Net-Cost/Quality-Incentive	TransDev (formerly Veolia)
Santa Clara VTA	San Jose, CA	1,766,650	35%	37%	Gross-Cost	MV

Fare Revenue Management

Fare Revenue Collection and Tracking

Most agencies follow one of two methods to collect cash fares from contractors. Larger agencies will typically instruct contractors to deduct any fare revenue from their monthly contract payments, while smaller agencies receive cash deliveries on a regular (usually daily) basis. All of the example agencies accept cash payment on board to preserve equitable access to transit for riders who are not able to buy tickets in advance, use a credit card to buy tickets, or have access to a smart phone for mobile ticketing.

For transit agencies with a variety of fare payment methods managed by a contractor, consolidated deductions may be a more efficient way to collect revenue and reduce the cost of fare handling on the side of the agency. A key factor for efficient collection and transfer is clear revenue tracking by the contractor, which should be overseen and verified by the agency on a regular basis.

Santa Rosa City Bus and Santa Clara VTA both receive monthly invoices that track expected fare revenue based on the number of rides given and the actual cash received. The agencies use this

information to track shortages and ensure that the operators are properly collecting fares. This process is to ensure the contractors have a policy and practice of avoiding revenue losses.

Contractor Management

The next step for effective fare revenue management is a collaborative relationship with the operator that involves clear standards and guidelines. Petaluma Transit, Nassau Inter County Express Bus (NICE Bus), and Tulsa Transit are three agencies that have clear standards in their paratransit contracts for farebox recovery:

- **Petaluma Transit** uses California's Transportation Development Act statewide requirement of a minimum 15%/10% farebox recovery for fixed-route/paratransit service as its standard for its contractor. The farebox recovery ratio is tracked by the agency and is a factor in contractor evaluation. In practice, the contractor does not have a difficult time meeting this requirement and the agency has not had to take direct action to enforce the standard.[9]
- **NICE Bus** in Garden City, NY has the closest contract structure to a net-cost model of all the example agencies. Their operator directly manages, operates, and maintains Nassau County's transit system and can adjust routes, modify services, and raise fares within guidelines set by Nassau County. The farebox revenues are owned by the County, who penalizes and incentivizes the contractor for differences from annual projected revenue. The contractor is responsible for paying up to 5% plus half of any variance greater than 5% of a revenue shortage. They can also receive a surplus of up to 5% plus half of any variance greater than 5% of anything that exceeds revenue projection. NICE Bus also leaves room for financial renegotiation if revenue shortfall is more than 10% for two quarters. This aspect of their contract resembles a quality-incentive model.[10]
- **Tulsa Transit** places the responsibility of revenue collection and control solely on the contractor. The contractor is responsible for any revenue losses or shortages regardless of cause.[11]

Fare Collection across Fare Media

For agencies with a variety of fare media options, fare ownership varies across payment method. For most agencies with digital payment technologies, that revenue is controlled directly by the agency, eliminating the process of transferring revenue between parties.

- **Petaluma Transit** offers paper tickets through a ticket office and website, through which revenue is handled by the agency. They are in the process of selecting a vendor for mobile ticketing, which will be managed directly by the agency.
- **Santa Rosa CityBus** owns all pre-paid fare media, including monthly passes and ticket books of 10 and 40.

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[9] National Center for Transit Research (2012), Analysis of Transit Contracting Models and Proper Incentives for Long-Term Success, https://www.nctr.usf.edu/wp-content/uploads/2015/06/77952-Transit-Contracting-Models.pdf

[10] Audit of Transdev's Management of the NICE Bus System (2015), https://www.nassaucountyny.gov/DocumentCenter/View/11752

[11] Tulsa Transit, Request for Proposals 18-1815: ADA Paratransit, Fixed Route Flexible, and Other Optional Transportation Services, http://tulsatransit.org/wp-content/uploads/2012/02/RFP18-1815-ADA-Paratransit-Fixed-Route-Flexible-Service-2018.pdf

- **King County Metro** Access offers monthly passes for paratransit-eligible riders through the Puget Sound's multiagency regional smartcard, ORCA, from which the revenue from the passes is transferred to the agency. The pass is added to the passenger's Access account, which is managed by the agency's customer service contractor. Operators can also accept mobile tickets through King County Metro's mobile ticketing platform, Transit Go. King County Metro is in a procurement process for a new contract, which would require the contractor to implement and manage an online payment system. Fare revenue from this program would be collected by the contractor and deducted from the monthly invoice along with cash fares received on-board.

Fare Policies and Short Fares

All example agencies had a fare policy in place that required full payment of the fixed-route or paratransit fare upon boarding, whether through on-board payment or through a customer account. Most of the agencies had a practice of not fully enforcing their fare policy, particularly on paratransit, due to the inherent equity issues with low-income disabled riders and the implications of denying a paratransit rider a ride. Additionally, due to the low fare recovery potential of a paratransit fare due to the high cost of paratransit service, the agencies did not prioritize the fares considering the potential risk involved.

- **Both Santa Rosa CityBus and Petaluma Transit** reported that they do not have significant enough issues with fixed-route and paratransit passengers not paying fares to reconsider their fare enforcement. Petaluma does not have its contractors keep track of who is shorting fares, nor do they have fareboxes that keep track of fare amounts. Instead, they take notice of repeat offenders and will intervene on a case-by-case basis.
- **King County Metro** Access recently amended their fare policy to include a three-step intervention plan for paratransit riders who regularly violate the fare policy. The contractor keeps track of the payment amount for each scheduled ride, and short fares are recorded on each passenger's account. The agency has a "no strand" policy so does not encourage operators to deny rides to those not paying the full fare. Instead, they are focusing on education rather than punishment and have found that one warning in the form of a letter informing the customer of the fare policy is enough to change behavior. Worst-case scenario is after two warnings, the rider will be suspended from reserving rides for a progressive length of time based on the number of previous suspensions (never greater than 30 days). More details about King County Metro's policy can be found in Appendix A.[12]

Contractor Transitions

To ensure a smooth transition between contractors, many of the example agencies had fare handling policies in place that would make it easy to transfer customer accounts and pre-paid fare media. For the agencies with clear standards for fare collection, such as Tulsa Transit, any negative or positive balances on customer accounts would be reconciled on a regular basis and the agency could transfer customer accounts to an incoming contractor in the case of a transition. As mentioned above, most of the agencies collected fares for all pre-paid fare media, whether through ticket offices and online platforms or through regular transfers of revenue from the contractor. In the case of a contractor transition, any incoming contractor would accept the same

[12] King County Metro (2018), Access Policy Manual: Fare Policy

fare media. For example, if a ticket book is sold by a contractor in December, the agency would collect that revenue at the end of the day or in the December invoice. In the event of a transition of contractors in January, the fares would be owned by the agency and the customer would be free to use the remainder of their ticket book.

Richmond GRTC recently transitioned between paratransit service contractors due to unacceptable service. The agency ended their contract with MV seven months pre-term and transferred the contract to First Transit. The agency encouraged the new contractor to hire the same drivers to encourage a smooth transition and save on training. Customers did not experience a break in service, and all accounts were moved to new service.[13]

Customer Accounts

A portion of the agencies accept payment through paratransit customer accounts, which allow customers to pay off-board and reduce or eliminate cash fare handling by the contractor. In order to avoid negative balances on accounts, the agencies require contractors to use different levels of enforcement to encourage riders to pay fares:

- **King County Metro Access** records all customer fare payment on the customer accounts, including fare shortages and non-payments. This information is tracked but customers are not denied rides because of past fare transgressions. Instead, a new policy aims to educate riders about fare payment to avoid future short fares.
- **Santa Clara VTA** accepts all fare payment through customer accounts, which can be loaded in advance by credit card or check. The agency's fare policy requires customers to have sufficient funds in their account upon booking to make a trip reservation. Insufficient funds or a negative balance will restrict the customer from reserving a trip until enough money is loaded onto the account.

To ensure an easy transition of customer accounts in the event of a contractor change, all customers' account balances should be reconciled between the agency and contractor in the form of daily payments or monthly invoices. The agency should own the value of the customer accounts and oversee the contractor management of the accounts to ensure proper fare collection and policy enforcement.

[13] GRTC to end contract with paratransit provider over 'unacceptable' service, April 5, 2017, Richmond Times-Dispatch, http://www.richmond.com/news/grtc-to-end-contract-with-paratransit-provider-over-unacceptable-service/article_64c00628-716f-5286-8032-6e11fa317a0b.html

FARE TECHNOLOGY ADOPTION

Mountain Metro is interested in pursuing new fare technologies for its fixed-route and paratransit services. This section provides guidance for adopting new fare technology and discusses the experience of other transit agencies when transitioning to new fare technologies.

Fare Technology Adoption in Practice

Mobile ticketing is an emerging technology option that is rapidly being adopted by transit agencies of all sizes. Mobile ticketing can make the experience of boarding and paying for transit seamless and can lower the barrier of entry for new transit users. Mountain Metro is interested in pursuing a mobile ticketing platform for its fixed-route and paratransit services. A detailed memo recommending requirements for inclusion in an RFP for a mobile ticketing vendor for Mountain Metro is included in the Appendix.

Agencies typically take one of two approaches to adopting mobile ticketing platforms—as a pilot program and/or through an official procurement process. To better understand fare technology adoption models in practice, several agency approaches were explored through informational interviews and online research. Details about each agency can be found in Figure 3-9.

Figure 3-9 Transit Agency Fare Technology Adoption and Procurement Approach

Agency	Location	Procurement Model	Technology Implemented
Golden Empire Transit (GET)	Bakersfield, CA	Pilot Program	Mobile Ticketing
Regional Transportation Commission of Washoe County (RTC Ride)	Reno, NV	Pilot Program	Mobile Ticketing
Champaign-Urbana Mass Transit District (MTD)	Champaign-Urbana, IL	Pilot Program	Phase 1: Mobile Ticketing Phase 2: Bluetooth Beacons
StarTran	Lincoln, NE	Pilot Program	Mobile Ticketing
Big Blue Bus (BBB)	Santa Monica, CA	Pilot Program then RFP	Mobile Ticketing
The Rapid	Grand Rapids, MI	RFP	Smartcard and Mobile Ticketing
King County Metro	Seattle, WA	RFP	Smartcard and Mobile Ticketing

Pilot Program

Many comparable agencies to Mountain Metro are currently offering mobile ticketing through a test or pilot program. This includes GET in Bakersfield, CA, one of Mountain Metro's peers from the fare study. Other agencies providing mobile ticketing through a pilot program include RTC Ride in Reno, NV, MTD in Champaign-Urbana, IL, StarTran in Lincoln, NE.

A pilot program allows the agency a chance to test the market for mobile ticketing in their service area and the mobile ticketing vendor a chance to refine the product. Start-up mobile ticketing

companies such as Token Transit and HopThru offer a product that is ready to launch within weeks, making them suitable options for a pilot. At Big Blue Bus (BBB) in Santa Monica, CA, a pilot program with Token Transit was launched within four weeks, including all marketing, training, and application customization.

The agreement signed for a pilot program can vary. BBB signed an Evaluation Agreement for mobile ticketing during the pilot. Another option is a Digital Pass Sales Outlet Agreement that authorizes the vendor to sell digital transit tickets. This agreement is similar to what would be signed with a grocery store or other third-party ticket vendor.

The drawback of using a pilot program is that the agency risks having to go through two procurement processes instead of one. Additionally, the agency cannot guarantee that the vendor participating in the pilot will be successful in the competitive bid.

- **Champaign-Urbana Mass Transit District (MTD)** in Champaign-Urbana, IL is currently piloting mobile ticketing using Token Transit as the vendor. They selected Token Transit after talking with several vendors at a transit fare conference. Their goals for the program are to lead the way in technology use, eliminate paper transfers without burdening customers who cannot afford a pass, and to avoid costly capital investments. One of the appeals to MTD of Token Transit is that there are no upfront costs associated with adopting the platform, which allowed MTD to launch a pilot program without releasing an RFP. MTD is launching mobile ticketing in two phases, with two separate contracts with Token Transit. MTD launched Phase 1 of the project, the mobile ticketing app, in April 2018. In Phase 2, MTD will implement Bluetooth beacons for tracking origin-destination data; they will not be using the beacons for ticket validation.

Procurement Process

To hire a mobile ticketing vendor, Mountain Metro will need to go through the procurement process. Some agencies who release an RFP for mobile ticketing have already conducted a pilot study, while others release the RFP in advance of adopting any new technology. In some cases, the agency releases an RFP to conduct a pilot program.

- **Big Blue Bus (BBB)** in Santa Monica, CA completed a year-long pilot study prior to releasing an RFP for a mobile ticketing vendor. The goal of the pilot was to test the market for mobile ticketing and improve customer experience. Many of the terms of the RFP were informed by the pilot program, including pre-validation for special/discounted passes, a way to offer promotional pass options, requirements for seamless customer service, and agency access to account management.

  Twelve vendors responded to the RFP, ranging from large companies to individual developers. Price proposals ranged from $125,000 for three years to $3.5 million. The bidders and their rankings were as follows:

  1. Token Transit
  2. Genfare
  3. Tixora
  4. Masabi
  5. Bytemark
  6. Passport
  7. Moovel North America
  8. Americneagle.com
  9. Zed Digital
  10. Mobile Programming
  11. DMI
  12. Dogtown Media

- BBB selected Token Transit based on scoring and price proposal. The contract between BBB and Token Transit is a two-year contract with a one-year option. Because Token Transit is a fast-growing start-up company, BBB staff had some concerns that the company might be acquired mid-contract. BBB included language in their contract regarding transferring of the account, protecting rights, and being informed should that occur.

Transfer Policies

In general, new fare technology can be adapted to meet the fare structure of an agency. The simpler the fare structure is, the less complicated new technology can be.

The trend among peer agencies who have adopted mobile ticketing has been to phase out one-time use paper or electronic transfers and to replace them with unlimited-ride hourly or day passes. Once a rider validates their ticket in the app, the ticket is valid for the amount of time specified by the agency.

- **The Rapid** in Grand Rapids, Michigan is updating their fare structure and transfer policy in 2018. The agency will be rolling out both a smart card and mobile ticketing option application. Their previous transfer policy was similar to Mountain Metro's: transfers were valid for a two-hour timeframe and three different routes, and were not valid on the same route they were purchased. With the rollout of two new payment methods, paper transfers will be eliminated with for cash-paying riders. Instead, the agency is implementing a free 90-minute paper-free transfer time when either a smart card or mobile ticketing are used.

Budgeting

Mobile ticketing vendors often charge the transit agency a set percentage of each fare sold. Transit agency approaches to how and where to account for the percentage of farebox revenues retained by the vendor when putting together budgets and revenue projections can vary. Some agencies have considered passing along the fee to the rider if they buy a ticket using the mobile ticketing app. MTD is monitoring the budget impacts of paying 10% of farebox revenues to Token Transit and will consider adjusting the fares for Token Transit passes if it proves to have a significant budget impact.

On the other hand, there was consensus that the transactional costs of mobile ticketing are likely offset by other savings such as dwell time reduction, customer convenience, and the potential to eventually transition away from paper transfers. BBB considers the transactional costs to be offset by savings in cash payment reduction (and associated dwell time operational savings) which can be reinvested in other service. MTD recognizes that there is overhead associated with selling cash fares, including staff time to stack and bundle dollar bills from the farebox dump.

Transitioning to New Fare Media

New fare technology is rapidly being adopted by transit agencies of all sizes. Mountain Metro is interested in understanding the transition to mobile ticketing and/or smart cards. This section provides lessons learned from two cities who have recently adopted new fare technologies.

Case Study: RTC Ride (Reno, NV)

RTC Ride is the public transportation system for the greater Reno/Sparks region of Nevada. In 2016, RTC Ride began offering mobile ticketing for fare payments. The agency wanted to expand opportunities for customers to purchase and use fares without additional investment in new equipment. Additionally, RTC Ride seeks to implement fare capping in the future, which is enabled by the new technology.

RTC Ride offered the following lessons learned during implementation of mobile ticketing in Reno/Sparks. On the agency side, they recommend working closely with all transit agency departments early during the implementation process, particularly finance, customer service, and operators, to ensure a smooth transition to the new fare media. Upon implementation, they have experienced few incidents between operators and customers. Operators were told to be more lenient with the new technology and err on the side of the customer, especially in the beginning.

On the customer side, the largest obstacle to implementation for many customers was downloading the app. Although many people have smartphones for internet access, many have not downloaded apps. RTC Ride's customer service has helped people with this process. Finally, RTC recommends considering an initial discount to attract riders and market the new option.

Case Study: King County Metro (Seattle, WA)

King County Metro recently transitioned to smart cards and mobile ticketing on both fixed-route and paratransit service. For their paratransit service, Access, customers can add a monthly pass to their paratransit account for off-board payment and use mobile tickets on-board. ORCA smart cards also have an e-purse function that allows customers to pay for fixed-route rides with a pre-loaded account if they are eligible paratransit riders. This function is not available on paratransit trips, due to the cost of putting proprietary ORCA card readers on all paratransit vans. In order for customers to gain access to ORCA passes and mobile tickets at a discounted paratransit fare, their eligibility status must be communicated between the agency, the customer service contractor, and the mobile ticketing service.

In this case, King County Metro's fare technology format has limitations in terms of how and who can use the various features. For other agencies looking to implement new fare technology, they should strive to keep the process as simple as possible for the benefit of both the agency and its customers. This includes focusing on limiting the number of people needed to verify eligibility for discounted rates and ensuring all riders have access to the same payment options.

RETAIL VENDORS

A review of Mountain Metro's current pass and ticket book distribution revealed that pass distribution is complicated for customers. Transit agencies commonly partner with third-party retail vendors, such as grocery stores, to provide convenient locations for riders to purchase fares. There is an opportunity to formalize and expand third-party retail sales of Mountain Metro's passes and ticket books. This section discusses Mountain Metro's existing vendor program, models for agreements with third-party vendors including refund and exchange policies, and presents a case study from California.

Vendor Agreement Models

Agreements with third-party vendors are typically on either a consignment or paid in advance basis.

- **Consignment**. Most of the time the passes are managed on a consignment basis–if the vendor sells it to a customer, they pay the agency for it. If it is not sold they simply return the (unsold) pass to the agency.
- **Paid in advance.** Some agencies sell fare products directly to the vendor, who then resell them to customers. Often vendors are provided with a discount for large purchases to incentivize partnership.

Previously, Mountain Metro partnered with retail outlets on a consignment basis. City policies have since changed to disallow consignment due to challenges posed by the need for reconciliation and inventory.

Mountain Metro currently partners with several retail outlets, including Safeway and King Soopers grocery stores, who pay in advance for fare products. Vendors are invoiced at the time that passes are sold, and have 30 days to pay the invoice. Cash refunds for unsold passes are not offered, however, exchanges of one pass type for another are allowed. Fare products available through these retailers include: single-ride tickets, 20-Ride Tickets, 31-Day Tickets, and Summer Haul passes (seasonally).

The current system presents several challenges to Mountain Metro. Each store has different retail practices, for example, charging a service fee in addition to the price of the pass. Because Mountain Metro does not have a formal contract or agreement with vendors in place, the agency cannot dictate the terms of how passes are sold to customers by retailers.

Vendor Discounts

With the paid in advance model, vendors are often offered a discount for large purchases to incentivize the partnership with the transit agency. Discounts can be offered at a flat rate—e.g., 10% discount on all sales—or a tiered rate based on the size of the ticket order. Below is a sample discount table from Orange County Transportation Authority (OCTA) in Orange County, California.

Figure 3-10 OCTA Retail Vendor Discount Table

Order Amount	Discount
$1,000-$2,000	2%
$2,001-$3,000	3%
$3,001-$4,000	4%
$4,001 or more	5%

Source: OCTA Vendor and Distributor Program http://www.octa.net/Bus/Fares-and-Passes/Vendor-and-Distributor-Program-Information/

OCTA stipulates that when passes are sold to the rider, they should be sold at the full price of the pass, regardless of the discount received by the vendor.

OCTA also offers a flat 5% discount to qualified non-profit organizations and social service agencies, with no minimum purchase. Creating a discount program for eligible non-profit and social service agencies (as well as city departments) in Colorado Springs was recommended as

part of the 2012 Fare Study. The study recommended a flat discount of 10% off the full price of tickets.

It is important to distinguish between the bulk sales of transit passes to a retailer or non-profit agency intended for resale to the rider, and bulk pass programs with employers and colleges. For more information regarding bulk pass programs for employers and colleges, see the Bulk Pass Programs section of this chapter.

Return and Exchange Policies

Similar to Mountain Metro, most agencies do not provide refunds on passes, but offer the opportunity to exchange pass products. OCTA's vendor guidelines stipulated that pass exchanges are considered in cases when passes were purchased more than 30 days prior and remain unsold. Retailers must also have a proven ability to sell the requested pass types. The agency also allows refunds, minus 5% retail value, in the rare case that a pass seller's agreement is ended.

Vendor Agreements and Guidelines

Transit agencies can provide vendors with a Pass Sales Agreement and Program Guidelines to formalize the partnership. This gives the transit agency some say in how their passes are handled and sold to riders. As mobile ticketing becomes more widespread, agencies are also adapting these agreements into a Mobile Pass Sales Agreement. Common terms of a pass sales agreement include:

- **Terms and conditions:** vendors must comply with guidelines (see below), and outlining responsibility for lost or stolen merchandise
- **Independent contractor:** defining the business relationship between vendor and agency
- **Termination:** how and when termination may occur
- **Program Guidelines:** Detailed guidelines for how the program is administered, including:
  - Eligibility and vendor application procedure
  - Ordering procedure
  - Discounts, including expectations for resale at full price, if relevant
  - Payment terms, including policies for refunds, returns, and exchanges
  - An overview of pass types and prices, including how to determine rider eligibility for discounted passes

Orange County Transportation Authority (OCTA) offers two programs for third-party vendors: a retail sales program and a social services bus pass distributor program. OCTA requires interested retailers and distributors to apply for and be approved for participation in the program. Their pass program guidelines provide a helpful template for a potential agreement with vendors in Colorado Springs, and is provided in Appendix B.

4 Fare Scenarios

The purpose of this section is to revisit the key findings from existing conditions and national best practices and introduce a range of fare concepts for further analysis and review. These scenarios are preliminary; options in some scenarios carried through to be part of the final recommendations while others did not.

Fare scenarios combine select concepts that can be compared against one another. This chapter describes six specific scenarios. Following the analysis of fare scenarios, two potential fare structure recommendation were developed based on results from the various concepts discussed in this chapter. Ridership and revenue implications of the two potential fare structure recommendations are also available in this chapter. Chapter 5 provides additional detail about fare structure and policy recommendations for Mountain Metro.

APPROACH AND ASSUMPTIONS

The fare model developed for this project is based on existing ridership and revenue data (FY 2016) and assumptions on average fare per passenger for each fare product. This information is then used as a baseline to understand order of magnitude changes to fare revenues and ridership as a result of pricing or structural changes.

Consumption of transit, like other goods and services, reacts to cost. Significant research over time has examined the sensitivity of transit ridership to fare increases. In transit, the standard measurement of sensitivity to fare changes means that for every 10% increase in fares, ridership will decrease by 3% (and vice-versa).

As such, elasticity factors are common in fare modeling, as they define the price sensitivity of riders to fare changes. An elastic factor suggests a larger change in ridership relative to a fare change. An inelastic factor suggests a relatively small change in ridership relative to a fare change. The model accounts for three elasticity factors[14]:

- A relatively inelastic factor (-0.33), which is consistent with industry standards for regular fares
- A "reduced" elasticity factor (-0.21) to account for observations associated with student, elderly, and disabled patrons

Using these elasticity factors, ridership changes (on a fare product basis) are determined from the proposed fare increase or decrease. A new average fare for each fare product is also calculated from the percentage change in the fare product price. Finally, multiplying the new ridership estimate by the new average fare produces a revenue estimate for that fare product.

[14] Source: TCRP Report 95, Chapter 12, *Transit Pricing and Fares*.

It should be cautioned that any estimation model is an approximation based on a set of assumptions and is highly dependent on accurate data inputs to ensure quality outputs. The fare model bases ridership and revenue changes strictly on price variation. Qualitative factors such as customer simplicity or other factors are not considered here, but are certainly factors in reality that influence ridership and revenue levels. Based on the perceived simplicity gains, it is likely that ridership benefits in each alternative are understated. As a result, the findings from this analysis are simply estimates but offer a valuable means to compare different alternatives against one another.

INITIAL FARE SCENARIOS

Six different initial scenarios for fare structure and pricing changes were developed to evaluate potential impacts to Mountain Metro ridership and revenue. These fare scenarios are described below.

- Scenario 1: Eliminate fare free for ADA riders
- Scenario 2: Incentivize pass products
- Scenario 3: Decrease base fare to $1.50
- Scenario 4: Eliminate free transfers
- Scenario 5: Increase base fare to $2
- Scenario 6: Eliminate 20-ride pass and replace with 7-day pass

Scenario 1: Eliminate Fare Free for ADA Riders

This scenario evaluates the ridership and revenue impacts of eliminating the free fare option on fixed-route transit for ADA-eligible passengers. A relatively small share of fixed-route passengers are ADA-eligible passengers riding free. Charging these passengers $0.85 for fixed-route service (equal to the special fare) results in an estimated 0.7% drop in ridership and a 2.5% increase in farebox revenues.

A comparison of the existing fare structure and proposed fare structure for Scenario 1 is provided in Figure 4-1Figure 5-1. Changes from existing are highlighted in **bold** text.

Figure 4-1 Scenario 1 Fare Structure

Fare Type	Existing		Proposed	
	Adult	Special	Adult	Special
Single Ride	$1.75	$0.85	$1.75	$0.85
Transfer	Free		Free	
Day Pass	$4.00	-	$4.00	-
20 Ride Ticket	$32.00	$16.00	$32.00	$16.00
31 Day Pass	$63.00	-	$63.00	-
Summer Haul Pass	$25.00		$25.00	
College Student	Free w/ID		Free w/ID	
Metro Mobility	Free		**$0.85**	

Scenario 2: Incentivize Pass Products

The existing conditions review revealed that pass products are not priced competitively. This scenario seeks to incentivize riders to purchase and use pass products through adjustments to pass pricing. Under this scenario, the Day Pass price is reduced to $3.50 (from $4.00), 20-Ride ticket prices are reduced to $30 and $12 for adult and special (from $32 for adult and $16 for special), and 31 Day passes are reduced to $55 (from $63). These changes produced a 1.0% gain in ridership and 3.5% loss of farebox revenue.

A comparison of the existing fare structure and proposed fare structure for Scenario 2 are provided in Figure 4-2. Changes from existing are highlighted in **bold** text.

Figure 4-2 Scenario 2 Fare Structure

Fare Type	Existing		Proposed	
	Adult	Special	Adult	Adult
Single Ride	$1.75	$0.85	$1.75	$0.85
Transfer	Free		Free	
Day Pass	$4.00	-	**$3.50**	-
20 Ride Ticket	$32.00	$16.00	**$30.00**	**$15.00**
31 Day Pass	$63.00	-	**$55.00**	-
Summer Haul Pass	$25.00		$25.00	
College Student	Free w/ID		Free w/ID	
Metro Mobility	Free		Free	

Scenario 3: Decrease Base Fare to $1.50

This scenario evaluates the ridership and revenue impacts of reducing the base fare to $1.50 (from $1.75) and special base fare to $0.75 (from $0.85). Pass prices are likewise reduced—Day Pass to $3, 20 Ride ticket to $25, Special 20 Ride ticket to $12, and 31 day pass to $45. Decreasing the base fare resulted in an estimated 4.1% increase in ridership and 15% drop in revenues.

A comparison of the existing fare structure and proposed fare structure for Scenario 3 are provided in Figure 4-3. Changes from existing are highlighted in **bold** text.

Figure 4-3 Scenario 3 Fare Structure

Fare Type	Existing		Proposed	
	Adult	Special	Adult	Adult
Single Ride	$1.75	$0.85	**$1.50**	**$0.75**
Transfer	Free		Free	
Day Pass	$4.00	-	**$3.00**	-
20 Ride Ticket	$32.00	$16.00	**$25.00**	**$12.00**
31 Day Pass	$63.00	-	**$45.00**	-
Summer Haul Pass	$25.00		$25.00	
College Student	Free w/ID		Free w/ID	
Metro Mobility	Free		Free	

Scenario 4: Eliminate Free Transfers

This scenario evaluates the ridership and revenue impacts of eliminating free transfers on fixed-route services. Without a free transfer option, cash-paying passengers who currently transfer are assumed to purchase a Day Pass. Eliminating free transfers would result in an increase in revenues of nearly 26% and a 2.5% decrease in ridership. It should be noted that this scenario includes a liberal assumption related to the number of passengers currently taking round-trips on Mountain Metro service[15]; as such, the revenue gains may be overstated.

A comparison of the existing fare structure and proposed fare structure for Scenario 4 are provided in Figure 4-4. Changes from existing are highlighted in **bold** text.

Figure 4-4 Scenario 4 Fare Structure

Fare Type	Existing		Proposed	
	Adult	Special	Adult	Adult
Single Ride	$1.75	$0.85	$1.75	$0.85
Transfer	Free		**N/A**	
Day Pass	$4.00	-	$4.00	-
20 Ride Ticket	$32.00	$16.00	$32.00	$16.00
31 Day Pass	$63.00	-	$63.00	-
Summer Haul Pass	$25.00		$25.00	
College Student	Free w/ID		Free w/ID	
Metro Mobility	Free		Free	

[15] Actual round-trip data was not available from Mountain Metro's most recent on-board survey

Scenario 5: Increase Base Fare to $2

This scenario evaluates the ridership and revenue impacts of increasing the base fare to $2 (from $1.75) and special base fare to $1 (from $0.85). Pass prices are likewise increased—20 Ride ticket to $35, Special 20 Ride ticket to $17. The 31 Day pass price is reduced to $60 and no changes are made to the price of the Day Pass, to make these more competitive options with the $2 base fare. Increasing the base fare resulted in a 1.8% decrease in ridership and 5.4% increase in revenues.

A comparison of the existing fare structure and proposed fare structure for Scenario 5 are provided in Figure 4-5. Changes from existing are highlighted in **bold** text.

Figure 4-5 Scenario 5 Fare Structure

Fare Type	Existing		Proposed	
	Adult	Special	Adult	Adult
Single Ride	$1.75	$0.85	**$2.00**	**$1.00**
Transfer	Free		Free	
Day Pass	$4.00	-	$4.00	-
20 Ride Ticket	$32.00	$16.00	**$35.00**	**$17.00**
31 Day Pass	$63.00	-	**$60.00**	-
Summer Haul Pass	$25.00		$25.00	
College Student	Free w/ID		Free w/ID	
Metro Mobility	Free		Free	

Scenario 6: Eliminate 20 Ride Pass and Replace with 7 Day Pass

Finally, this scenario evaluates the ridership and revenue impacts of replacing the 20-Ride pass with a 7 Day pass. The new 7 Day pass is priced at $22 for adult and $11 for special. The potential market for a 7 Day pass was estimated using Mountain Metro rider survey results from 2017. Three potential user groups were identified: 1) 20 Ride pass users who ride six or more days per week, round-trip; (2) cash-paying passengers who ride six or more days per week, round-trip; and (3) 1 Ride pass users who ride six or more days per week, round-trip. Eliminating the 20 Ride pass and replacing it with a 7 Day pass resulted in a less than 1% increase in ridership and a 5.8% decrease in revenue.

A comparison of the existing fare structure and proposed fare structure for Scenario 6 are provided in Figure 4-6. Changes from existing are highlighted in **bold** text.

Figure 4-6 Scenario 6 Fare Structure

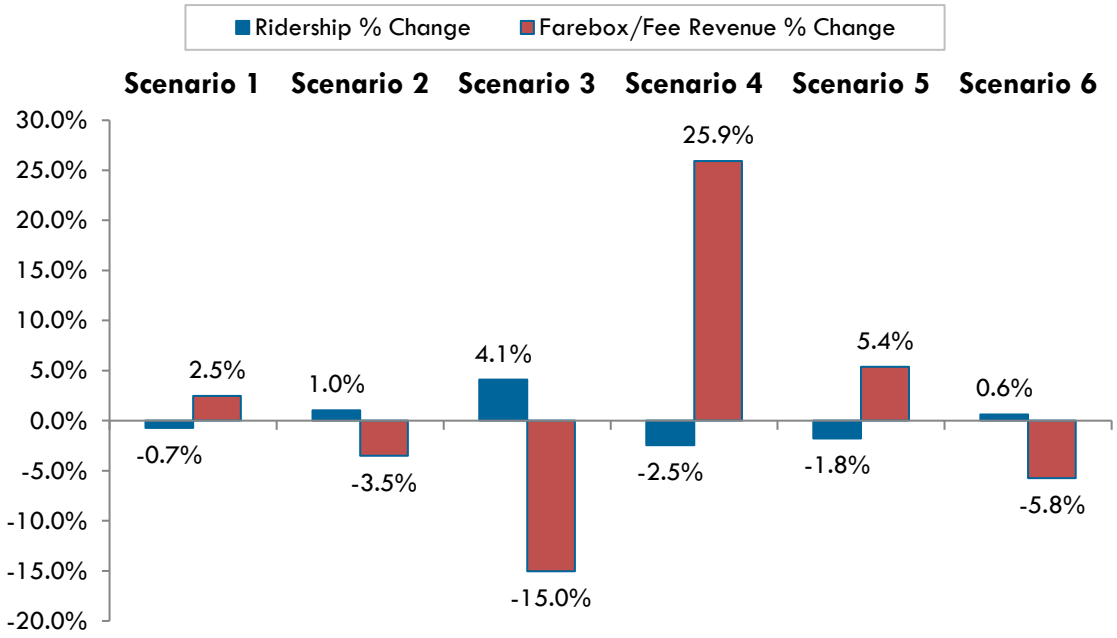
Fare Type	Existing		Proposed	
	Adult	Special	Adult	Adult
Single Ride	$1.75	$0.85	$1.75	$0.85
Transfer	Free		Free	
Day Pass	$4.00	-	$4.00	-
20 Ride Ticket	$32.00	$16.00	**-**	**-**
7 Day Pass	-	-	**$22**	**$11**
31 Day Pass	$63.00	-	$63.00	-
Summer Haul Pass	$25.00		$25.00	
College Student	Free w/ID		Free w/ID	
Metro Mobility	Free		Free	

Initial Fare Scenario Results

The relative ridership and revenue changes for each scenario are shown in Figure 4-7. The fare structure and resulting ridership and revenue impacts for each scenario are described in further detail below.

- Scenario 1, which proposes charging Metro Mobility passengers the same discounted fare as other Special fare riders, resulted in less than 1% ridership loss and a minimal increase in fare revenues.
- Scenario 2, which reduced pricing on pass products to incentivize their use, results in a moderate loss of revenues and slight increase in ridership. Because the fare model does not account for new riders who will be attracted to the lower-priced passes, the ridership increase is likely to be higher in this scenario.
- Scenario 3, which decreased the base fare from $1.75 to $1.50 and adjusted pass products accordingly, resulted in the highest ridership gains and the biggest loss in fare revenues.
- Scenario 4 eliminated free transfers, resulting in the highest fare revenue gain (25.9% increase) but the greatest negative impact to ridership.[16]
- Scenario 5 increased the base fare from $1.75 to $2.00 and raised the price of 20-Ride and 31-Day pass products. This scenario results in a 2% ridership loss and 5.4% revenue gain.
- Finally, Scenario 6 evaluates the market for a 7-Day pass in lieu of the 20-Ride pass. This change would result in a minor increase in ridership and moderate loss of fare revenues.

Figure 4-7 Initial Fare Scenarios Ridership and Revenue % Change



[16] However, as previously noted, these revenue gains may be somewhat overstated.

INITIAL FARE STRUCTURE RECOMMENDATIONS

Based on the results of initial fare scenario analysis, two recommended fare scenarios were developed—one that maintains the current base fare of $1.75, and another that increases the base fare to $2. The fare structure and resulting ridership and revenue impacts for each scenario are described in further detail in this section. Final proposed recommendations are available in Chapter 5.

Recommended Scenario: $2 Base Fare

Recommendations in this scenario are to increase the base fare to $2 Adult/$1 Special, adjust pass pricing to make pass products more attractive, and create reduced price 1 Day pass and 31 Day pass options. Similar to Scenario 5, prices are raised on several pass products; the 20 Ride ticket is increased to $35 (from $32), the Special 20 Ride ticket is increased to $17 (from $16), and the Summer Haul Pass is increased to $30 (from $25). To make these options more attractive, the 31 Day pass price is reduced to $60 and no changes are made to the price of the Day Pass. Additionally, a Special 1 Day pass is introduced for $2 and Special 31 Day pass is introduced for $30.

The Recommended Scenario with $2 base fare would result in an estimated 1.7% drop in ridership and 3.1% increase in revenues. However, ridership reductions due to price increases may be overstated—pricing unlimited passes more attractively should lead to additional increased ridership, which is not reflected in the fare model.

A comparison of the existing fare structure and proposed fare structure for the Recommended Scenario with $2 Base Fare is provided in Figure 4-8. Changes from existing are highlighted in **bold** text.

Figure 4-8 Recommended Scenario - $2 Base Fare Structure

Fare Type	Existing		Proposed	
	Adult	Special	Adult	Adult
Single Ride	$1.75	$0.85	**$2.00**	**$1.00**
Transfer	Three Free within Two Hours in One Direction		**Valid for Two Hours in Any Direction**	
Day Pass	$4.00	-	$4.00	**$2.00**
20 Ride Ticket	$32.00	$16.00	**$35.00**	**$17.00**
31 Day Pass	$63.00	-	**$60.00**	**$30.00**
Summer Haul Pass	$25.00		**$30.00**	
College Student	Free w/ID		Free w/ID	
Metro Mobility	Free		Free	

Recommended Scenario: $1.75 Base Fare

Recommendations in this scenario are to adjust pass pricing to make pass products more attractive and create reduced price 1 Day pass and 31 Day pass options. In this scenario, the 31 Day pass price is reduced to $55, and the Day Pass price is reduced to $3.50. Additionally, a Special Day pass is introduced for $1.75 and Special 31 Day pass is introduced for $27. This scenario results in a 0.8% increase in ridership and a 4.5% loss of revenue. However, pricing unlimited passes more attractively should lead to additional increased ridership, which is not reflected in the fare model.

A comparison of the existing fare structure and proposed fare structure for the Recommended Scenario with $1.75 Base Fare is provided in Figure 4-9. Changes from existing are highlighted in **bold** text.

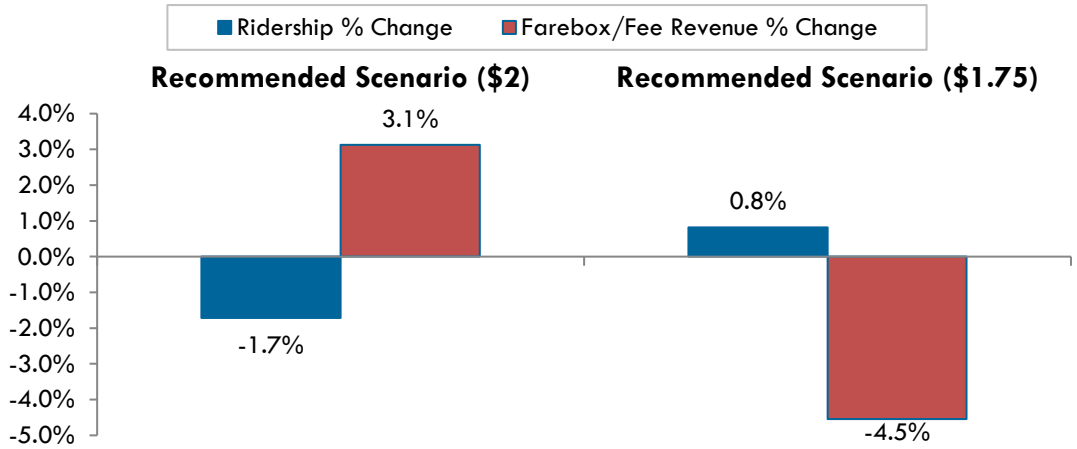
Figure 4-9 Recommended Scenario - $1.75 Base Fare Structure

Fare Type	Existing		Proposed	
	Adult	Special	Adult	Adult
Single Ride	$1.75	$0.85	$1.75	$0.85
Transfer	Three Free within Two Hours in One Direction		**Valid for Two Hours in Any Direction**	
Day Pass	$4.00	-	**$3.50**	**$1.75**
20 Ride Ticket	$32.00	$16.00	$32.00	$16.00
31 Day Pass	$63.00	-	**$55.00**	**$27.00**
Summer Haul Pass	$25.00		$25.00	
College Student	Free w/ID		Free w/ID	
Metro Mobility	Free		Free	

Initial Fare Structure Recommendations Results

The relative ridership and revenue changes for each of the recommended scenarios are shown in Figure 4-10.

Figure 4-10 Recommended Fare Scenarios Ridership and Revenue % Change



Recommended Fare Scenario Benefits and Trade-offs

The recommended scenarios would both help Mountain Metro achieve the goals of the fare study, with some trade-offs. Mountain Metro staff weighed the relative ridership and revenue impacts, as well as alignment with study goals, to determine the preferred scenario. Increasing the base fare to $2 would help reduce cash payments, speed up boarding times, and reduce administrative costs of cash handling. However, peer research indicates that Mountain Metro's base fare of $1.75 is comparable to peer agencies, including several agencies with higher levels of service (both ridership and annual service hours). A summary of how the initial recommended scenarios aligned with study goals is shown in Figure 4-11.

Figure 4-11 Recommended Fare Scenarios and Study Goals

Study Goals	Recommended Scenario ($2.00)	Recommended Scenario ($1.75)
Make fares less complicated	🟢	🔴
Improve fare structure and match to service quality	🟢	🟡
Improve operations and speed up boarding	🟢	🔴
Ensure equitability	🟢	🟢
Be conscious of low-income ridership	🟡	🟢
Increase ridership and minimize lost revenue	🟡	🟡

5 Recommendations

The final chapter culminates the findings—quantitative, qualitative, and from the fare modeling effort—to establish a set of fare policy, pricing, and product recommendations for Mountain Metro. The following fare recommendations incorporate results from reviewing national best practices, evaluation of fare scenarios, and refining concepts with Mountain Metro staff.

The recommendations in this section are divided into three categories:

- **Fare Structure and Policy Recommendations**: Recommendations to specific fare products offered to the riding public and pricing of those products.
- **Fare Policy Recommendations:** Recommendations relate to internally adopted policies or procedures that relate to fare collection, revised or new fare policies such as bulk pass sales, eligibility, and use of pennies.
- **Fare Technology Recommendations**: Recommendations relate to specific fare media offered to the riding public.

Recommendations specific to fixed-route or paratransit service are provided for both categories.

FARE STRUCTURE RECOMMENDATIONS

Fixed-Route Fare Structure Recommendations

Implement Recommended Fare Structure

The recommended fare structure for fixed-route transit is provided in Figure 5-1. The recommended fare structure takes into account experience across the transit industry, fare study goals, as well as fare pricing at peer agencies. Additionally, upcoming service changes in Fall 2018 will enhance the existing transit network, and the fare structure should be adjusted accordingly.

The recommended fare structure incorporates the following:

- **Increase the Base Fare and Special Fare** to flat dollar amounts. This increase should occur in conjunction with the planned service increase in Fall 2018. The reduced fare will be offered at half the cost of the regular cash fare.
- **Decrease 31-Day Pass cost** to make this a more attractive option and encourage use of pass products instead of cash fares.
- **Create new Special 31-Day Pass** priced at half of the regular 31-Day Pass cost.
- **Create new Special 1-Day Pass** priced at half of the regular 1-Day Pass cost.
- **Increase prices for the 20-Ride Pass and Special 20-Ride Pass.** The new pass prices maintain the discount at the current level in conjunction with fixed-route base fare price increase.

- **Increase Summer Haul Pass cost** pricing in conjunction with fixed-route base fare price increase. The new pass price maintains the discount at the current level.
- **Increase Metro Mobility-eligible fixed-route pricing** to half the base fare for fixed-route trips. One PCA is still eligible to ride for free when accompanying a Metro Mobility-eligible rider.

Figure 5-1 Recommended Fare Structure – Fixed-Route

Fare Category	Existing Fare	Existing Multiplier/ Discount	Proposed Fare	Proposed Multiplier/ Discount
Fixed-Route				
Single Ride Ticket	$1.75	-	$2.00	-
Special Single Ride Ticket	$0.85	-	$1.00	-
Day Pass	$4.00	2.3	$4.00	2.0
Special Day Pass	-	-	$2.00	2.0
20-Ride Ticket	$32.00	9%	$35.00	13%
Special 20-Ride Ticket	$16.00	9%	$17.00	13%
31-Day Ticket	$63.00	36	$60.00	30
Special 31-Day Ticket	-	-	$30.00	30
Summer Haul Pass	$25.00	14.3	$30.00	15
Metro Mobility Certified	Free	-	$1.00	-

Metro Mobility Fare Structure Recommendations

Implement Recommended Fare Structure

The recommended fare structure for Metro Mobility paratransit service is provided in Figure 5-2. The recommendations incorporate the following:

- **Increase Metro Mobility pricing** to twice the base fare for trips within the ADA service area. This change is in conjunction with the recommended fixed-route base fare price increase.
- **Eliminate Metro Mobility 40-Ride Pass and consider eliminating all paper passes for Metro Mobility.** Mountain Metro is the only agency among peers to offer a 40-Ride pass for demand response service. It is recommended for Mountain Metro to eliminate 40-trip passes. As Mountain Metro adopts new fare technologies that provide account-based fare payment options, it is recommended that Mountain Metro consider eliminating all paper passes for Metro Mobility.

Figure 5-2 Recommended Future Fare Structure – Metro Mobility

Fare Category	Existing Fare	Existing Multiplier/ Discount	Proposed Fare	Proposed Multiplier/ Discount
Metro Mobility				
Base Fare	$3.50	-	$4.00	-
10-In City Mobility Book	$35.00	10	$40.00	10
40-In City Mobility Book	$140.00	40	-	-

POLICY RECOMMENDATIONS

Fixed-Route Policy Recommendations

Provide Two-Hour Transfer Window

The current transfer policy adds complexity and confusion for passengers and drivers. Mountain Metro operators noted that paper transfers are one of top causes of delay upon boarding. It is recommended that Mountain Metro change the transfer policy to provide a two-hour transfer window that is valid in any direction. Free transfers within a two-hour window would apply to all riders including single ride, Day pass, and 20-Ride pass holders. Mountain Metro will need to work with Genfare to reprogram fareboxes to accommodate this change for riders using magnetic swipe cards. This change will eliminate the “dip” requirement that currently causes operational challenges.

Prohibit Use of Pennies

Use of pennies for fare payment is a cause of delay and increased dwell time, as reported by Mountain Metro operators. As such, it is recommended that Mountain Metro implement a policy to prohibit the use of pennies for fare payment.

Initiate Employer Bulk Pass Program

Mountain Metro should continue to explore potential partnerships related to bulk pass programs, particularly for large employers in Colorado Springs. The benefit to major institutions is that a well-designed program provides a simple, packaged solution to help solve transportation access issues to their organization.

It is recommended that the cost of a Mountain Metro's bulk pass program be based on the number of trips taken by pass holders and the pre-determined cost per trip. Bulk pass agreements should be formalized with a contract to ensure that Mountain Metro is adequately reimbursed for ridership. At the same time, the partner entity can be confident that they benefit from the relationship through improved access to service for employees and discounted rates associated with a pre-paid fare. Mountain Metro should consider the following in developing pricing structures and contracts for bulk pass programs:

- **Discounted per trip rates:** Bulk pass programs almost always offer a discounted trip rate. The amount of the discount must balance the benefit of a large, bulk purchase with the actual cost of providing the service.
- **Actual trips taken by bulk pass holders:** The number of trips taken together with the fare determines the cost of the program, and thus agreement on how the number of trips taken is measured is critical. Depending on the type of fare collection system used by a transit agency, pass usage may be easily measured at the farebox. In other cases, the bulk pass program can measure trip levels through surveys.
- **Escalation rates:** Bulk pass programs are nearly always effective in increasing transit ridership. Consequently, program costs can increase substantially after the first year. Transit agencies and universities often negotiate escalation rates to ensure program cost increases are manageable for end users, especially in the early years of the program. Bulk pass programs with existing institutions such as UCCS should be revised to allow for periodic adjustment of pricing according to changes in ridership, operating cost, and level of service provided.
- **Program marketing:** For bulk pass programs to be successful, they must be successfully marketed. Marketing should capitalize on the cost benefits to riders and the environmental benefits associated with the program and should include information about how to use transit and/or other transportation programs.

Expand College Student Pass Program

Mountain Metro is already working to expand the college student pass program to include Pikes Peak Community College. It is further recommended that Mountain Metro determine a plan for re-negotiating contracts with UCCS and Colorado College based on ridership levels in the future.

Establish Pass Sales Agreement and Vendor Guidelines

There is an opportunity to formalize and expand third-party retail sales of Mountain Metro's passes and ticket books. It is recommended that Mountain Metro establish a Pass Sales Agreement to formalize the partnership between the agency and third-party retailers. The Pass Sales Agreement should include Vendor Guidelines that provide detailed guidelines for how the program is administered.

The following guidelines are provided for Mountain Metro's consideration:

- **Ordering and Invoicing:** It is recommended that Mountain Metro maintain existing ordering and invoicing procedures with vendors. Vendors are invoiced at the time that passes are sold, and have 30 days to pay the invoice.
- **Discounts:** Consider offering a discount—either flat or tiered—for large purchases to incentivize the partnership. The discount should be based on what is financially feasible for the agency. Commonly, retailers are given up to a 5% discount and social service agencies are given up to a 10% discount on bulk purchases. A tiered discount should also take into consideration the size of existing orders from retail vendors. Vendors should be expected to sell passes and tickets at full price, regardless of the discount received.
- **Exchange and Return Policy:** It is recommended that Mountain Metro maintain existing return and exchange policies with vendors. Cash refunds for unsold passes are not offered, however, exchanges of one pass type for another are allowed. Exchanges should be allowed at face value of tickets and passes, regardless of the discount received at the time of purchase.
- **Pass Information and Rider Eligibility:** It is recommended that Mountain Metro provide vendors with up-to-date pass type and price information, including detailed instructions for determining rider eligibility for Special Fare and other reduced-price fare products.

Fixed-Route and Metro Mobility Policy Recommendations

Establish Guidelines for Fare Increases and Farebox Recovery

Several factors need to be considered when raising fares, ranging from how fares are perceived by the transit-riding public, whether they are in line with peer agencies, to what is the appropriate ratio between passenger fares and operating costs. In the future, Mountain Metro should consider a transparent fare increase policy that enables more regular fare increases to stay in line with inflation and other revenue related trends.

The following guidelines are provided for Mountain Metro's consideration:

- On a semi-annual basis, the average fare, subsidy per passenger, and farebox recovery ratio should be reviewed when developing the annual operating budget. If all three ratios are declining and costs to operate the service are increasing, consider a fare adjustment.
- The local consumer price index should be monitored; if increases are greater than 5% in any given year, consider increasing fares to keep pace with inflation.
- Monitor and track use of all passes and if there is a significant drop in sales with any fare product, consider a fare adjustment for that product. Similar to underperforming routes, underperforming fare products should be evaluated for adjustments or elimination.
- For all future fare increases, pass products prices should be rounded to the nearest dollar. Single-ride prices and/or day pass products should be rounded to the nearest quarter.
- Fuel prices should be considered as part of a fare adjustment policy. However, given the volatility in fuel prices, it may be difficult to use average cost of fuel as a consistent barometer for a fare increase policy.
- Across-the-board fare increases are simple and transparent, but will often create disproportionate impacts. These types of fare increases should be avoided unless supported by evidence that the strategy meets specific goals at the time of evaluation.

- Premium services, or services that offer a competitive time or comfort advantage over vehicle or transit alternatives should be priced at a higher level to differentiate the product.

These guidelines assume that service levels would remain constant. Fare increases paired with service level increases may be warranted assuming support exists for both. Fare increases paired with service cuts should be avoided when possible.

FARE TECHNOLOGY RECOMMENDATIONS

Fixed-Route and Metro Mobility Fare Technology Recommendations

Implement Mobile Ticketing

Onboard survey results indicated that 54% of existing Mountain Metro customers would use a mobile ticketing option. Additional research indicates Mountain Metro may be able to lower the barrier of entry for new riders by offering a mobile ticking option. It is recommended that Mountain Metro move toward implementing mobile ticketing for fare payment along with an updated fare structure and service changes.

An in-depth discussion of the requirements for a mobile ticketing platform that meet the needs of Mountain Metro and their customers is provided in the Appendix.

Figure 5-3 Fare Media Portfolio Recommendation

Fare Media	Current Portfolio	Recommendation
 Cash	✓	Keep
 Swipe Card	✓	Keep
 Smart Card	-	Do not offer riders a smart card program due to cost
 Mobile Ticketing	-	Offer riders a mobile ticketing option due to user friendly and low cost options

ALIGNMENT WITH FARE STUDY GOALS

Fare structure, policy, and technology recommendations seek to align with the goals outlined at the beginning of the fare study. Benefits of the recommendations include bringing pass discounts more in line with peers and industry practices, speeding up boarding by incentivizing the use of passes instead of cash, higher ridership, administrative cost savings through reduced cash handling, simplified fare structure, and ensuring fare equity among passengers while adding new reduced pricing options. The following table summarizes the alignment of recommendations with fare study goals and objectives.

Figure 5-4 Recommended Fare Structure and Policy Alignment with Study Goals

Fare Study Goals	Strategies	Recommendations Results
Make fares less complicated	▪ Easier transfers with new transfer policy ▪ Flat dollar amounts for base fare ▪ Special fare exists for every pass type	
Improve fare structure and match to service quality	▪ Moderate increase to base fare occurs in conjunction with service increase	
Recommend new fare technologies	▪ Mobile ticketing option with visual validation is recommended ▪ Smartcard adoption is not recommended at this time due to costs	
Improve operations and speed up boarding	▪ Easier transfer policy (2-hour window) reduces delays and minimizes confusion ▪ Mobile ticketing option can speed up boarding ▪ Eliminating payment with pennies and creating flat dollar fare will speed up cash payments at the door	
Evaluate fare media and incentivize pass usage over cash payments	▪ Better discounts on 1-Day and 31-Day passes will incentivize pass usage	
Reduce potential for conflict at the farebox	▪ Easier transfer policy (2-hour window) reduces potential for conflict	
Ensure equitability among passengers	▪ Special fare exists for every pass type ▪ Special fare and Metro Mobility-certified riders pay the same fare on fixed-route services	
Be conscious of low-income ridership	▪ Better discounts on 1-Day and 31-Day passes can offset burden of base fare increase	
Increase ridership and minimize lost revenue	▪ Mobile ticketing option will help attract new riders ▪ Better discounts on 1-Day and 31-Day passes will help attract new riders ▪ Recommended Scenario ($2.00) results in 3% fare revenue increase and 1.7% decrease in ridership	

IMPLEMENTATION AND PHASING

It is anticipated that fare structure, policy, and technology recommendations will be implemented in three phases over the next two years.

- **Fall 2018.** Mountain Metro is planning a service increase of 11% in Fall 2018. Along with these changes, Mountain Metro plans to implement the following fare changes:
  - Begin charging Metro Mobility-certified riders a discounted fare on fixed-route services
  - Create Special 31-day pass
- **Spring 2019.** The second phase of implementation will begin in Spring 2019. With the exception of mobile ticketing, Mountain Metro plans to implement all remaining recommendations at this time.
- **Fall 2019.** Following the procurement process, Mountain Metro plans to implement mobile ticketing in the Fall of 2019.

SUMMARY OF RECOMMENDATIONS

Fare recommendations for Mountain Metro are comprised of organizational policies, fare policies, and pricing adjustments. Phase 1 recommendations are largely comprised of policy changes, while Phase 2 recommendations consider a fare structure to increase farebox recovery in keeping with agency goals and peers. Figure 5-5 provides a summary of recommendations developed as part of the Mountain Metro fare study.

Figure 5-5 Fare Recommendations Summary

Fare Recommendations	
Fare Structure Recommendations	*Fixed-Route Recommendations* ▪ Implement Recommended Fare Structure. The recommended fare structure incorporates the following: – Increase the Base Fare and Special Fare to flat dollar amounts – Decrease 31-Day Pass cost – Create new Special 31-Day Pass – Create new Special 1-Day Pass – Increase prices for the 20-Ride Pass and Special 20-Ride Pass – Increase Summer Haul Pass cost – Increase Metro Mobility-eligible fixed-route pricing to half the base fare for fixed-route trips. One PCA is still eligible to ride for free when accompanying a Metro Mobility-eligible rider *Metro Mobility Recommendations* ▪ Implement Recommended Fare Structure. The recommended fare structure incorporates the following: – Increase Metro Mobility pricing to twice the base fare – Eliminate Metro Mobility 40-Ride Pass and consider eliminating all paper passes for Metro Mobility
Fare Policy Recommendations	*Fixed-Route Recommendations* ▪ Provide Two-Hour Transfer Window ▪ Prohibit Use of Pennies ▪ Initiate Employer Bulk Pass Program ▪ Expand College Student Pass Program ▪ Establish Pass Sales Agreement and Vendor Guidelines *Fixed-Route and Metro Mobility Recommendations* ▪ Establish Guidelines for Fare Increases and Farebox Recovery
Fare Technology Recommendations	*Fixed-Route and Metro Mobility Recommendations* ▪ Implement Mobile Ticketing – Visual validation